



# DIABETES IN EUROPE

## POLICY PUZZLE

### THE STATE WE ARE IN

**EURADIA**  
Alliance for European Diabetes Research

**FEND**  
Foundation of European Nurses in Diabetes

 **International  
Diabetes Federation  
Europe**

**PCDE**  
PRIMARY CARE DIABETES EUROPE



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## WE ACKNOWLEDGE THE CONTRIBUTION OF

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- **Fastlane** – Design and layout
- **Rosseels** – Printing

## REPORT FUNDING

This publication was funded by FEND, IDF Europe, and PCDE, EURADIA provided a donation in kind.

Generous educational grants were received from:

- Lilly Diabetes
- Novartis
- Novo Nordisk
- Sanofi Diabetes

This project has been carried out with full transparency and independently from its funding sources.



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# FOREWORD

The discovery of insulin in the early part of the 20<sup>th</sup> century was a major landmark in diabetes medical research. The world changed forever for those diagnosed 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 a long, healthy life. This reasonable expectation requires health systems to implement evidence-based diabetes care into daily practice. It is clear from this survey that this goal has not yet been realised fully in European healthcare systems.

More than 20 years ago, European governments meeting under the aegis of the World Health Organization (WHO) unanimously approved the St Vincent declaration - a series of recommendations to tackle the burgeoning diabetes epidemic. The evidence that the disease had reached epidemic proportions was strong; today it is overwhelming. Diabetes is extending into particularly vulnerable populations of children, migrants and a growing ageing population. 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 accomplish this and the strategy remains fragmented throughout Europe.

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 to produce a whole-of-Europe audit in order to document further the epidemic and the disparate national policies and practices that currently exist. We applaud this important work.

The basis for action to tackle diabetes effectively 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. Regrettably, this audit reveals the ongoing gap between evidence-based practice and the healthcare that our citizens receive in most European countries.

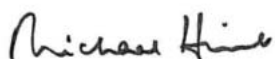
The 2013 *IDF Diabetes Atlas* 6<sup>th</sup> edition estimates that in Europe there are 56.3 million adults living with diabetes and this is projected to reach nearly 70 million by 2035 – more than 10% of the total population of the wider European region.

Significant efforts have been made to raise awareness of diabetes, both at the international level, with the UN Resolution on diabetes of 2006, the UN high-level meeting in 2011 and follow-up in July 2014, and at the European level, with the European Parliament Resolution in 2012 and the EU Summit of NCDs in 2014. The political declaration by the UN General Assembly, resulting from the 2011 high-level meeting, can be found in the UN summit report. Yet while commitment exists, it has not been fully translated into action, begging the question: what further actions can be taken to curb the escalating burden of diabetes?

As parliamentarians, together with the IDF President, Sir Michael Hirst, we have regular contact with European and national parliamentarians and with many of our constituents who live with the worry and risks of diabetes. Concerted political action is required urgently across all European states and with national diabetes associations and relevant European NGOs.

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.

Action now can improve lives and make evidence-based practice a reality across the whole of Europe.



**Sir Michael Hirst**  
President of the International  
Diabetes Federation



**Marisa Matias**  
Member of  
the European Parliament



**Adrian Sanders, MP (UK)**  
Head of Parliamentarians for Diabetes  
Global Network (PDGN) and European Policy  
Action Network on Diabetes (ExPAND)



**Christel Schaldemose**  
Member of  
the European Parliament

# PREFACE

## DIABETES IN EUROPE

This audit once again covers the entire European region. It is produced by the same four non-governmental diabetes organisations responsible for the 3<sup>rd</sup> edition: IDF Europe, FEND, PCDE and EURADIA. We share a conviction that providing sustained and comparative documentary evidence on the epidemic levels and disparities in diabetes care services across the European region will help to persuade governments and healthcare providers that action to deal with this condition is imperative. This update of the 2011 report on national policies and practices relating to the prevention, screening and management of diabetes is published amidst an alarming increase in diabetes incidence, not only in Europe, but throughout the world.

According to IDF, diabetes affects around 382 million people worldwide. In Europe, prevalence estimates now stand at 8.5% of the population aged between 20 and 79 years – meaning that 56.3 million people are living with diabetes in the whole of Europe. This is forecast to rise to 68.9 million by 2035. 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 excellent state of knowledge and consensus on risk factors, prevention and treatment of diabetes argue 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.



This edition enquired specifically about important areas of diabetes:

- screening for diabetic eye disease
- screening for renal impairment
- gestational diabetes and diabetes in pregnancy
- the availability of nurses specifically trained to assist people in managing their diabetes
- the ongoing availability of diabetes education throughout the lifetime of those affected in order to raise their understanding of the condition and assist in their self-care.

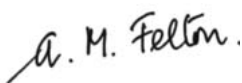
The findings were disappointing, not to say alarming. For example, while it is well known that simple eye screening techniques on a regular basis can identify early retinal changes enabling treatment that can prevent visual loss and blindness, there was a general lack of understanding of the essential need for such screening both by healthcare professionals and by people with diabetes and their families. All these areas need to be addressed in nearly all the countries surveyed.

In the previous edition, we highlighted the September 2011 Heads of State and Government 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)).

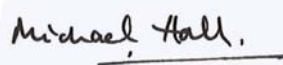
At the time, our organisations, representing all aspects of diabetes from research to care delivery, firmly upheld the view that international organisations, such as the EU, the Council of Europe and WHO, in partnership with national governments and relevant NGOs, should come together to implement and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

This position remains relevant. We lament the lack of progress in setting up such a reference centre for diabetes and ask now for the establishment of national diabetes centres as national priorities.

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



**Anne-Marie Felton**  
Co-Chair, *Policy Puzzle*  
Steering Committee  
President, Foundation  
of European Nurses in Diabetes



**Michael Hall**  
Honorary Consultant  
and Board Member,  
International Diabetes  
Federation – Europe

On behalf of the Steering Committee

# EXECUTIVE SUMMARY

The European Coalition for Diabetes (IDF Europe, FEND, PCDE and EURADIA) has once again joined forces to publish this 4<sup>th</sup> edition of the *Policy Puzzle* at a time when Europe is still faced with the growing epidemic of diabetes, despite considerable and increasing political awareness of the health risks of diabetes and the realisation that the disease is largely preventable. By presenting a review of the situation in Europe and how diabetes has evolved over the last three years, this 4<sup>th</sup> edition aims to monitor the evolution of the current epidemic and report on the national policies and practices that exist across 47 European countries. As well as providing evidence to policy makers and key stakeholders in diabetes about the epidemic and related policy frameworks, this comprehensive audit will provide evidence to improve the implementation of policies.

## BACKGROUND

There is no doubt about the extent of diabetes as a global public health concern. The 2013 *IDF Diabetes Atlas* estimates that 382 million adults worldwide have diabetes, a figure that is projected to increase to some 600 million by 2035. In Europe there are 56.3 million adults living with diabetes and this is projected to reach nearly 70 million by 2035 – more than 10% of the total population of the wider European Region.

Efforts have been made to raise awareness of diabetes, both at the international level, with the UN Resolution of 2011 and follow-up in July 2014, and at the European level, with the European Parliament Resolution in 2012 and the EU Summit on NCDs in 2014. Yet while commitment exists, it has not been fully translated into action, begging the question: what further actions can be taken to curb the burgeoning burden of diabetes?

# KEY FINDINGS AND THE WAY FORWARD

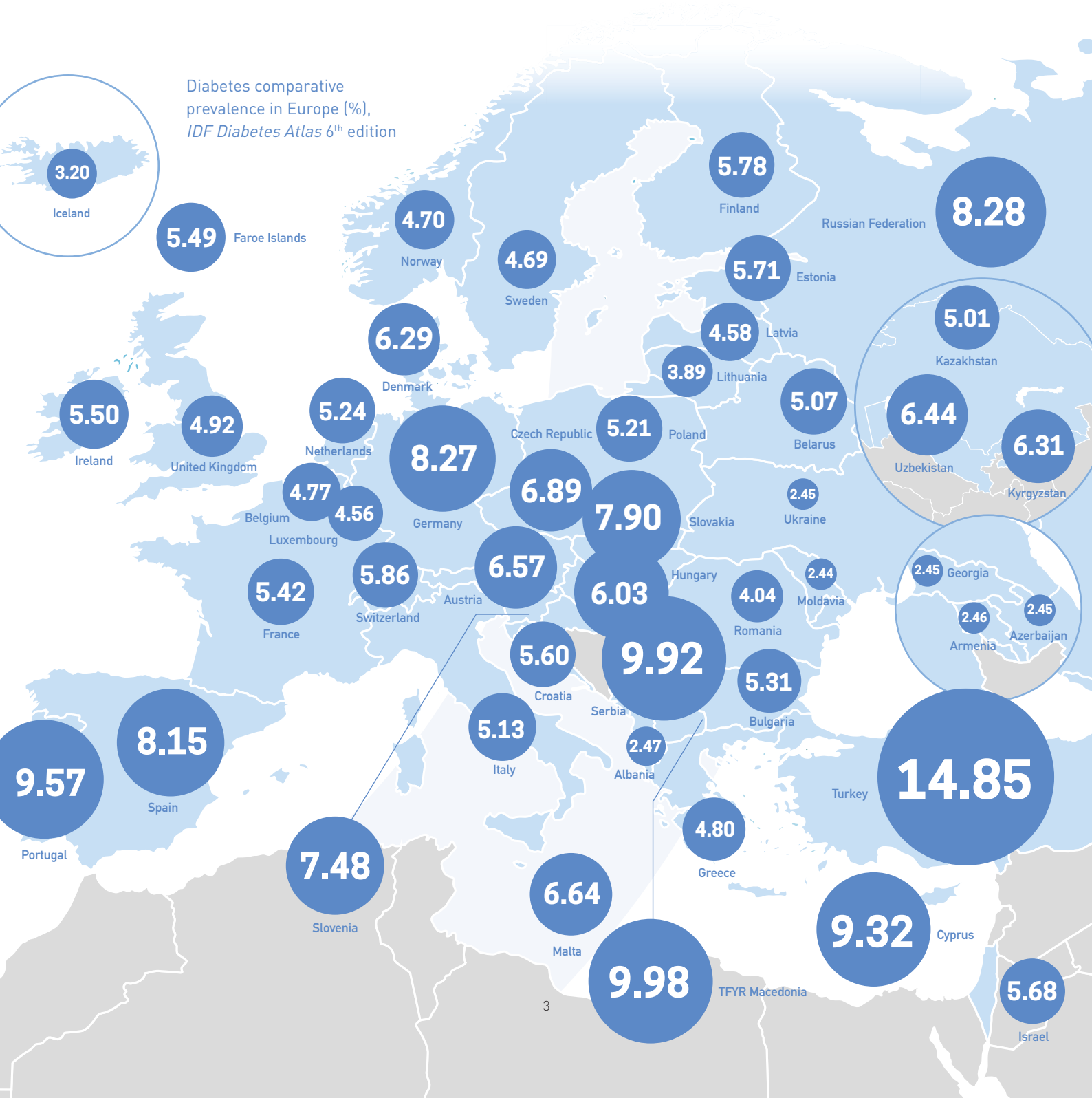
## EPIDEMIOLOGY AND INFORMATION SYSTEMS

An estimated 8.5% of the adult population in Europe has diabetes. National rates of prevalence rank from 2.4% in the Republic of Moldova to almost 15% in Turkey.

Although the growth of the diabetes burden in Europe is undisputed, the scarcity of comparable data makes it difficult to quantify this increase at both national and European levels. In this field, national diabetes registers play a key role in monitoring the status of the epidemic, as well

as ensuring good-quality care. Although there has been an absolute increase in the number of countries with some kind of diabetes register – from 23 in 2011 to 30 in 2014 (out of 47 countries) – more than 83% were considered by stakeholders to be incomplete. Results were even poorer in terms of data for specific populations – such as pregnant women: only seven countries reported collecting data on this topic within their registries.

➤ **Given the key role of robust, comprehensive data to inform policies and measure their impact, it is essential to sustain and increase efforts to collect, monitor and analyse key data on the diabetes epidemic throughout the region, according to shared European criteria.**



# POLICY

## NATIONAL PLANS

The large majority of European countries have taken steps to address these challenges at policy level. Currently 30 countries out of 47 are implementing a national plan addressing diabetes specifically or within a plan for non-communicable diseases (NCDs). Another 10 have announced such plans for the near future. The remaining seven have either joined an international initiative on diabetes; have adopted a national resolution; or cover diabetes in their national health plans. An increasing number of countries are moving towards plans for NCDs rather than plans addressing diabetes alone. However, European countries still have to implement fully a comprehensive, multi-sectoral approach to diabetes, including factors from outside the health sector with in their diabetes policies. Despite marginal improvements, monitoring and evaluation remain a major weakness of most of these plans, with information on cost and cost analyses being conspicuous by their absence.

**30** countries have **national plans covering diabetes**



**10** countries will have such **a plan in the future**

### Monitoring and evaluation

remain a **major weakness**

in most of these plans

- > **Efforts should be sustained towards a dedicated national strategy for diabetes with adequate implementation and result-monitoring systems in place. Sufficient nationwide resources and multi-stakeholder involvement at all stages and levels are essential to build a successful response to diabetes at the national level.**

## PREVENTION

This survey has revealed that primary prevention is increasingly seen as a key priority for policy makers in Europe. Instruments for diabetes prevention are almost universally present throughout the continent: primary prevention policies and campaigns targeting obesity and overweight, promoting healthy eating, physical activity, smoking cessation or tackling harmful use of alcohol are reported in more than 95% of European countries.

Nonetheless, gaps remain in terms of the scope, inclusiveness, implementation, and monitoring and evaluation of policies and plans. These shortcomings will have to be addressed in order to ensure a coherent response to the challenges created by diabetes and to ensure comprehensive implementation of the international and European declarations to which European countries have committed.

**95%** of European countries **target** obesity, smoking



and harmful use of alcohol, and **promote** a healthy diet and **physical activity**

**Prevention** remains **poorly funded**

Only **9** countries **reported budgets** for prevention policies and campaigns

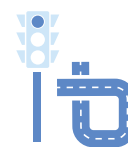
- > **Despite noticeable progress, gaps remain in the scope, inclusiveness, implementation, and monitoring and evaluation of prevention policies and plans. These gaps will have to be addressed in order to ensure a comprehensive response to the challenges created by diabetes.**

## CARE PROVISION

### GUIDELINES

All 47 countries covered in this edition of the *Policy Puzzle* have some form of guidelines on diabetes. Most use a combination of national and international guidelines to disseminate best practices among healthcare professionals and people with diabetes. Type 2 diabetes care is the most widely covered topic; approximately one third of the countries surveyed have guidelines covering all areas relevant to diabetes prevention, care and management. However, while guidelines exist, their implementation and monitoring is severely lacking across the region, so much so that many stakeholders were not always aware of the existence or level of implementation of guidelines in their country.

All **47** countries have some form of **diabetes guidelines**



**Implementation** and **monitoring** are severely **lacking**. Stakeholders are **not always aware of the existence of guidelines**.

- > **Systems should be in place to monitor the implementation of guidelines. This would create a culture of responsibility and accountability, leading to better and more equitable care for all people with diabetes.**

### DIABETES AND PREGNANCY

Data on diabetes in pregnancy were difficult to access and the purpose of their collection and use appeared to be unclear. Among the 32 countries where this information was provided and confirmed, more than 38% reported not routinely collecting any data on diabetes and pregnancy; fewer than 22% routinely collected both prevalence and outcome data on diabetes and pregnancy.

Further to the call in the previous edition of the *Policy Puzzle* for interventions targeting pregnant women, it was encouraging to note that the majority of countries routinely conduct diabetes screening among pregnant women. Of the 42 countries where conclusive information was collected on this topic, more than 70% recommend and/or routinely offer systematic screening of all pregnant women. The remaining 30% prefer a targeted approach and recommend offering diabetes screening only to pregnant women with high risk factors or, in some cases, symptoms of diabetes. However, barriers to access and variations in availability and implementation of guidelines need to be addressed urgently.

Among **32** countries who provided this information, **38%** do not collect data on **diabetes and pregnancy**



- > **Improved data collection on diabetes and pregnancy will help national health policy makers to understand the extent of the problem and take steps towards early detection. Barriers to accessing diabetes screening and variations in availability and implementation of guidelines need to be addressed urgently.**

### EYE CARE

Widely reported good availability of eye screening and treatment services reflects the generally healthy status of this field in Europe. Almost 75% of countries reported providing or recommending screening at least once a year for all people with diabetes while about 20% offer screening every two years. However, although the majority of countries reported that eye screening and treatment are offered, huge differences persist in terms of equal access within countries and across the region. Almost two thirds of the countries that reported recommending regular screening and providing treatment services reported some variations in these areas.

**75%** of countries provide or recommend **yearly eye screening** for people with diabetes but **huge access inequalities remain**



- > **The availability and accessibility of eye screening and treatment services can be improved by ensuring that publicly supported healthcare services for diabetes-related eye diseases function adequately and are distributed equitably across countries.**

## RENAL CARE

While screening options for kidney complications are widely available throughout Europe, the availability and accessibility of the various related treatment options constitute a major concern. Overall, 19 countries – more than one third of the countries in the region – reportedly make available all of the screening and treatment options surveyed. However, treatment options, such as renal dialysis at home and kidney transplantation, were only reported to be available in around half of countries surveyed.

**Renal dialysis** at home and **kidney transplantation** services are **not available** in around **50%** of the countries



- > In order to prevent or delay the need for expensive treatments, access to frequent routine screening needs to be improved and economical treatment options made available.

## STRUCTURED EDUCATION

More than two thirds of the countries in Europe recommend diabetes education for all newly diagnosed people. Evidently, efforts are being made to ensure that some level of education is provided for people with diabetes. Despite this, and the recommendations on education from the last edition, our findings imply that there continues to be a lack of continuity in education throughout a person's lifespan, as well as a lack of general education available to family members of people with diabetes. Nearly 75% of countries in the region do not recommend continuous universal education to people with diabetes. The same proportion of countries does not provide relevant education to family members. Furthermore, our survey highlighted general implementation issues regarding the actual provision of diabetes education. These include cost, lack of time and lack of adequate training.

Nearly **75%** of countries do not recommend **continuous education** to all people with diabetes



- > The availability of and equal access to continuous good-quality diabetes education for people with diabetes and their family members is of the utmost importance. Trained, dedicated healthcare professionals evenly distributed within countries should provide diabetes education according to national standards of quality at an affordable rate for all people with diabetes and their family members.

## DIABETES SPECIALIST NURSING

Nurses work in diabetes throughout Europe, but their status, role, training and level of involvement in care differ greatly. More than half of the countries (29) stated that nurses working in diabetes care acquire their skills and knowledge while employed in a facility offering diabetes care. Only 19 countries – fewer than half of those surveyed – indicated that diabetes nursing is recognised as a speciality.

The link between status and role is quite apparent: in around two thirds of the countries in which diabetes specialist nursing is a recognised speciality, nurses also play a central role in overall diabetes management for all people with the disease. However, it is also apparent that some countries have nurses who are specialised in various aspects of diabetes management despite a lack of official status. Encouragingly, regardless of status, in more than 80% of countries, nurses play an important role in providing education for self-management.

Only **19** countries indicated that **diabetes nursing is recognised as a speciality**



- > The professional status of diabetes specialist nurses should be acknowledged and postgraduate academic accredited training provide to enable nurses to take play a greater role diabetes care, education and research – balancing responsibilities between different healthcare professionals to improve the distribution of care provision across the health sector (primary, secondary, community).

# CALL FOR ACTION

Despite the progress recorded here, the commitments made by individual governments and national health providers need urgent and adequate implementation if Europe is to challenge and confront the growing burden of diseases successfully. Our findings illustrate clearly a growing awareness of the need for action but the often-quoted inability to fund change is hindering progress.

This 4<sup>th</sup> edition of the *Policy Puzzle* shows that Europe is making progress, but it is simply too slow and too limited to stem the tide of diabetes. Publicly stated commitments by countries must be realised through positive action, without further delay.



# 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 high blood glucose (hyperglycaemia), which over time causes damage to blood vessels, nerves and other tissues.<sup>1</sup> Hyperglycaemia combined with abnormal levels of lipids in the blood (dyslipidaemia), high blood pressure (hypertension) and smoking often leads to long-term complications, such as cardiovascular disease, eye damage and loss of vision (retinopathy), kidney disease (nephropathy) and dysfunction of the nervous system. There are three main types of diabetes: type 1 diabetes, type 2 diabetes and gestational diabetes.

## TYPE 1 DIABETES

The principal disorder in type 1 diabetes is the absolute deficiency of insulin production. This usually results from a destructive process affecting the insulin-producing beta cells in the pancreas. The reasons for this autoimmune reaction are not fully understood. Type 1 diabetes affects people of all ages but tends to occur in children and young adults. People who are affected require insulin treatment in order to control their blood glucose levels. Without insulin, people with type 1 diabetes will die.

The symptoms of type 1 diabetes can appear quickly. They include excessive urination, thirst, constant hunger, weight loss, visual disturbances and fatigue.

With proper access to insulin, careful blood glucose monitoring, healthy eating and regular physical exercise, most people with type 1 diabetes can lead a long and healthy life.

## TYPE 2 DIABETES

Type 2 diabetes is by far the most common form of diabetes, comprising more than 90% of all cases worldwide. It is often associated with unhealthy eating, physical inactivity and overweight (especially excessive abdominal adiposity), and usually occurs in adults but is increasingly seen in children and adolescents.

In type 2 diabetes, the body produces insulin, but this is not sufficient and/or the body does not respond adequately to insulin. This is known as insulin resistance or insensitivity to insulin. Insufficient insulin and unresponsiveness to insulin lead to a build-up of glucose in the blood. The symptoms of type 2 diabetes may be similar to those of type 1 diabetes, but tend to be less marked. As a result, the disease may not be diagnosed until several years after onset, when disabling complications have already developed. Type 2 diabetes is a largely preventable disease,<sup>2,3,4</sup> and the complications can be delayed through evidence-based interventions.<sup>5</sup>



Many people with type 2 diabetes are able to manage their disease by eating a healthful diet and keeping physically active, or with oral medication. People with type 2 diabetes may be prescribed insulin if they are unable to regulate their blood glucose levels with other medications.

The number of people with type 2 diabetes is increasing throughout Europe and worldwide.<sup>6</sup> This is associated with societal changes accompanying economic development, including ageing populations, increased urbanisation, dietary changes, reduced physical activity, and changes in other lifestyle patterns.<sup>7</sup> Type 1 diabetes and type 2 diabetes usually develop due to a mix of genetically inherited and environmental factors. The risk of type 1 diabetes is increased about 15 times for people with a parent or sibling with the condition, but more than 85% of people who develop type 1 diabetes do not have a parent or sibling with type 1 diabetes. Many genes appear to contribute to the risk of type 2 diabetes, and between 40% and 80% of people who develop type 2 diabetes have a parent or sibling with the condition. About 1-2% of diabetes is due to a specific single gene mutation: this is often referred to as maturity-onset diabetes of the young.

## GESTATIONAL DIABETES

Gestational diabetes is defined as any degree of glucose intolerance with onset or first recognition during pregnancy.<sup>8</sup> Gestational diabetes occurs because the action of insulin is impaired during pregnancy. Overweight and obesity during pregnancy are linked with a substantially increased risk for gestational diabetes,<sup>9</sup> which is becoming increasingly common as the epidemics of obesity and type 2 diabetes continue worldwide.

Unmanaged hyperglycaemia in pregnancy can affect the mother and her child. Risks include preeclampsia, obstructed labour due to fetal macrosomia (a significantly larger than average baby) and hypoglycaemia at birth for the baby. Women who have had gestational diabetes are at

a higher risk of developing gestational diabetes in subsequent pregnancies and of developing type 2 diabetes later in life.<sup>10</sup> Babies born to mothers with gestational diabetes also have a higher lifetime risk of obesity and type 2 diabetes.

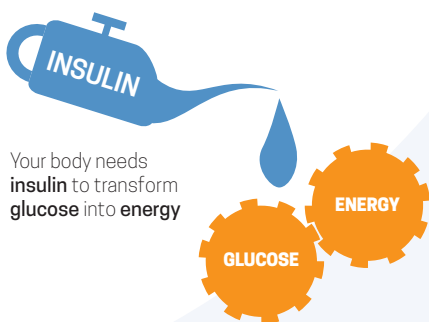
With an increasing proportion of women of reproductive age overweight or obese in Europe and worldwide, gestational diabetes and maternal obesity are important drivers of the escalating global burden of diabetes.<sup>11</sup>

## A COSTLY, GROWING EPIDEMIC

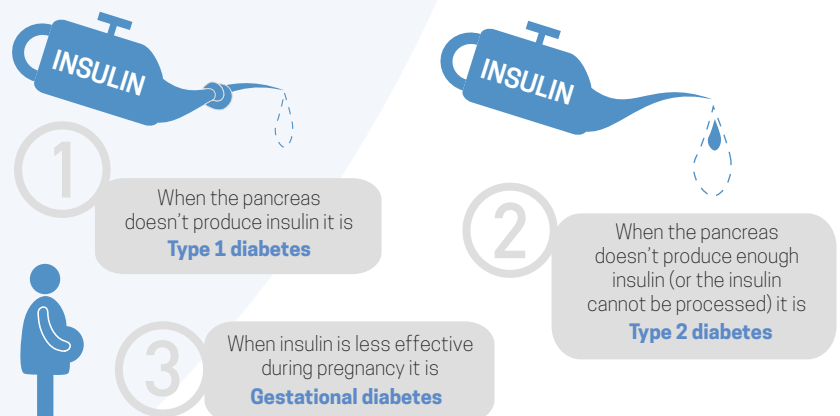
Diabetes and its complications have provoked a considerable increase in mortality over the past 20 years in several European countries. Diabetes is ranked among the leading causes of cardiovascular disease, blindness, kidney failure and lower-limb amputation. About 75% of people with diabetes die following a major cardiovascular event – the primary cause of death in Europe. People with type 2 diabetes have a two- to four-fold higher risk of coronary heart disease compared with the general population.

Of particular concern is the increasing occurrence of type 2 diabetes in children and adolescents, largely due to the high levels of obesity in these age groups. While diabetes is reported to be the fourth leading cause of death in Europe, this may be an underestimate given the total number of people with diabetes in the continent. Diabetes-related deaths are based on death certification, which records only deaths directly attributable to diabetes. Thus deaths may not be attributed to the long-term complications of diabetes, such as cardiovascular disease.

The public health challenge posed by diabetes is very considerable. Yet the growing epidemic and its human, social and economic costs can be reduced. To do so will require substantially raising public awareness of diabetes and its complications, implementing preventive measures, ensuring early detection and implementing evidence-based management.



## Diabetes in a nutshell



# INTRODUCTION

It is now indisputable that diabetes, one of the four major non-communicable diseases (NCDs), is a key public health issue around the world and a leading contributor to Europe's burden of disease.<sup>12</sup> According to the 2013 *IDF Diabetes Atlas*, currently there are approximately 382 million adults aged between 20 and 79 living with diabetes worldwide. In Europe, diabetes is estimated to affect 56.3 million adults aged between 20 and 79 – 8.5% of the adult population. Even more worryingly, this figure is set to increase: by 2035, it is estimated that nearly 70 million people will be living with diabetes in Europe, driving regional prevalence to beyond 10%.<sup>6</sup>

There have been several international and European declarations on diabetes, such as the St Vincent declaration in 1989 and the UN Resolution of 2006, which signalled the start of global recognition of the threat posed by diabetes. In the last decade, the prevention and control of diabetes and other NCDs has risen up the European and global health agendas (see Timeline below). Yet real actions and tangible results appear to be lacking. Commenting on the UN NCD Review in July 2014, WHO Director-General Dr Margaret Chan remarked, "I see no lack of commitment. I see a lack of capacity to act..."<sup>13</sup> At that meeting, UN

Member States reiterated their commitment to take further steps to tackle NCDs, and recognised that progress since the 2011 UN General Assembly (UNGA) declaration has been slow. From our survey we can also report that while some progress has been made, much more can be done to reduce the growing burden of diabetes in Europe.

Diabetes is not just a clinical issue; it is a huge societal and economic concern. The complications resulting from diabetes can lead to life-long disabilities, impacting on people's ability to earn a living, support a family and have an

## May 2004

WHO Global Strategy on Diet, Physical Activity and Health



## International

## December 2006

UN Resolution 61/225: World Diabetes Day

## October 1989

Diabetes Care and Research in Europe: The St Vincent Declaration

## April 2006

European Parliament Resolution on addressing the EU diabetes epidemic

## June 2006

Council of the European Union Conclusions on promotion of healthy lifestyles and prevention of type 2 diabetes

## September 2006

WHO Regional Committee for Europe Resolution: Prevention and control of NCDs in the European regions

active role in the community. This can result in loss of economic productivity and spiralling healthcare costs. The latter is of enormous concern, given the current economic austerity measures in place across much of Europe. Indeed, Europe's treatment-oriented rather than prevention-oriented health systems are already unsustainable in their current forms.

## AIMS

IDF Europe, FEND, PCDE and EURADIA have again joined forces to update *The Policy Puzzle* at a time when Europe is still faced with a growing diabetes epidemic, despite considerable and increasing political awareness of the health risks of diabetes and the knowledge that the disease is largely preventable. By presenting the situation in Europe and outlining how this has changed over the last three years, this 4<sup>th</sup> edition aims to monitor the evolution of the diabetes epidemic and the national policies and practices that exist across the region. This comprehensive audit of diabetes policies and activities will provide evidence about the diabetes epidemic and the related policy framework to policy-makers and key stakeholders in diabetes, and present evidence to improve the implementation of policies.

The following information details the scope of this audit, the topics included and the information that was sought to complete the audit.

## EPIDEMIOLOGY AND INFORMATION SYSTEMS

In view of the estimated 382 million people living with diabetes, including 56.3 million in Europe, reliable and timely information on this epidemic is essential. Accurate rates of diabetes prevalence and incidence among different population groups are necessary to forecast the allocation of resources for care<sup>14</sup> and monitor the progression of the epidemic. Diabetes registers play a key role in this regard. Registers are "systems to register and track all cases of a given health condition in a specific population".<sup>15</sup> At the individual level, registers help to ensure quality and continuity of care. For healthcare professionals, registers can support and monitor the implementation of best practices and contribute to translational research. In terms of policy, registers provide vital input for policy planning and resource allocation.<sup>15,16</sup> The purpose of a register will define the type of information it collects, while the quality of the data collected and the completeness of the register will determine the role the register can play at these different levels.

It is on these latter points that this audit has collected data from stakeholders in the 47 European countries surveyed, as a means to follow up on the previous 2011 edition. Stakeholders were asked to provide information on whether there is a national diabetes register in their country, which population group(s) the register covers and whether it is considered to be complete. Follow-up interviews in some cases facilitated further details of the reasons for these choices and the aims of each register. However, the methods and criteria for collecting and using data at a national level were not investigated and should be the subject of further research.

## Diabetes policy timeline

**2008**

WHO 2008-2013 Action Plan for the Global Strategy for the Prevention and Control of NCDs

**April 2011**

Moscow Declaration on Healthy Lifestyles and NCD Control

**September 2011**

Political declaration of the High-Level Meeting of the UN General Assembly on the Prevention and Control of NCDs

**2013**

WHO Global Action Plan for the Prevention and Control of NCDs 2013-2020

**July 2014**

UNGA NCD Review

Europe



**September 2011**

WHO/Europe Action Plan for implementation of the European Strategy for the Prevention and Control of NCDs 2012-2016

**March 2012**

European Parliament Resolution on addressing the EU diabetes epidemic

**April 2014**

EU Summit on NCDs

## POLICY – NATIONAL PLANS AND PREVENTION

Information on each country's political response to diabetes is vital to assess the way the disease is addressed at all levels, and to determine whether or not diabetes is a priority. Actions are based on policy, and for diabetes, this has meant the development of national plans to tackle the disease. Some plans address diabetes alone; others alongside other NCDs. Systematic and coordinated approaches to diabetes aim to improve diabetes prevention and care. IDF's *Guide to National Diabetes Programmes*<sup>17</sup> recommends that a diabetes plan should cover the main types of diabetes (type 1 diabetes, type 2 diabetes and gestational diabetes – for further information, see 'What is diabetes?' on page 14); ensure a continuum of care from primary prevention to treatment of diabetes and diabetes complications; and provide resources, services and systems to support these. Due to the complexity of diabetes and its associated risk factors, such a plan has to be developed collaboratively, involving a range of different stakeholders – including government officials and national agencies, healthcare professional and patient organisations, and business leaders and insurers.<sup>17</sup>

In this audit, stakeholders were asked whether their country had joined any international initiatives on diabetes (see Timeline on previous page) and/or passed any national resolutions on diabetes. We investigated whether or not countries are currently implementing a national diabetes plan, an NCD plan with elements specific to diabetes, or whether, lacking any plan, they will be implementing one of these in the near future. With IDF recommendations in mind, we enquired about the areas that are or will be covered in these plans. These areas include primary prevention, screening and diagnosis, healthcare provision, support for self-management, information collection systems and research in diabetes. In order to assess the inclusiveness of the development process of these plans, we asked which stakeholders are or will be involved in the development of the plans – such as relevant Ministries, agencies, and patient and healthcare organisations. Also important are the reference sources used to develop these plans: international guidelines, research, previous national plans, experience exchanges with other countries. Not only does this information improve understanding of the current plan; it can also guide stakeholders in their future policy steps.

Measuring achievements and changes after policy implementation is essential to ensure progress and accountability while supporting evidence-based policy-making.<sup>18</sup> In the words of WHO Director-General Margaret Chan, "What gets measured gets done".<sup>19</sup> Therefore, this audit investigates key specific components of monitoring and evaluation that ideally should be incorporated into a national plan for diabetes. These include results of a baseline study, lists of measurable milestones for each objective and associated deadlines, monitoring and evaluation systems and cost-effectiveness.

Furthermore, with financial resources under particular scrutiny in the current economic climate and policy-makers emphasising affordable, cost-effective values,<sup>20,21</sup> particular attention was given to the budgets allocated to national plans and strategies and to the use of cost analysis for various aspects of these policies.

Due to the growing burden of diabetes and other NCDs, this audit focused specifically on prevention policies and actions. Questions were included regarding the adoption or future adoption of national and/or regional prevention strategies and campaigns relevant to diabetes, and the areas covered therein. A recent study indicated that

**“ Measuring achievements and changes after policy implementation is essential to ensure progress and accountability**

achieving the 2011 global targets on selected risk factors would lead to a 20% worldwide reduction by 2025 in the probability of death from one of the four major NCDs.<sup>22</sup> Because of the role of policy in preventing the development of diabetes and diabetes-related complications,<sup>23,24</sup> the *Policy Puzzle* audit survey collected information on policies covering five broad prevention topics: obesity and overweight, healthy food and diet, physical activity, smoking and harmful use of alcohol. Existing affordable, cost-effective interventions in all of these fields have been shown to significantly reduce risk factors for NCDs.<sup>21</sup> As these policies go beyond diabetes, this audit took into account any policy, strategy or programme addressing the five topics. As with national plans, specific information was collected from each country on the resources allocated to and evaluation of these prevention policies.

In order to distinguish between provision in policy documents and what is actually happening on the ground, key stakeholders in the field of diabetes – patient and healthcare professional organisations – were asked to assess policies on prevention and national plans for diabetes in the context of the different elements highlighted in IDF’s definition of national plans.<sup>17</sup> These stakeholders were asked to provide their organisation’s appraisal of the design (including objectives and targets) of their country’s diabetes-relevant policies, political support for the policies, resources allocated, implementation, and the recognition and involvement in these policies of people with diabetes and diabetes healthcare professionals.

## CARE PROVISION

### GUIDELINES IN DIABETES



Guidelines are an essential tool to inform healthcare professionals and those affected of recognised standards and protocols, and ensure even access to high-quality care for people living with a health condition. Diabetes is a complex disease requiring many such guidelines across different levels of healthcare.

Ideally, guidelines in diabetes are developed from sound evidence-based recommendations by relevant healthcare professionals, in consultation with all stakeholders, including people with diabetes. This ensures that healthcare providers and users of healthcare understand fully the information being relayed to all concerned. In this audit, stakeholders were asked about the types of guidelines they use in their respective countries – including international guidelines from organisations such as ADA, NICE and IDF, national guidelines from the Ministry of Health and/or national health agencies, and national guidelines from healthcare professional organisations.

Stakeholders were given the opportunity to indicate which of the topics covered in the guidelines they actually use. These include primary prevention strategies, screening and diagnosis of diabetes and related complications, healthcare pathways and management (for type 1 diabetes and type 2 diabetes, complications, and gestational and pre-existing diabetes in pregnancy) and structured patient education. Inclusion of these topics would indicate that a country is making efforts in all aspects of diabetes, from primary prevention through to treatment, care and self-management. The existence of such guidelines, the type of guidelines and the topics they cover demonstrate the degree to which relevant information is available for delivery to people with diabetes.



## DIABETES AND PREGNANCY



Many physiological changes occur during pregnancy. Hormonal changes can result in insensitivity to insulin (insulin resistance), which can lead to changes in blood glucose levels.<sup>25</sup> In women who develop diabetes during pregnancy (gestational diabetes) and women with known diabetes before they became pregnant (pre-existing diabetes), these changes can result in increased risks for mother and child.

Advanced age of new mothers – more and more widespread in Europe<sup>26</sup> – is associated with increased risk of developing gestational diabetes. This, together with increases in levels of overweight and obesity throughout Europe, is fuelling a growing prevalence of gestational diabetes.<sup>6</sup> Affected mothers and their newborns are at increased risk of developing type 2 diabetes in later life, with other associated long-term metabolic and cardiovascular risks.<sup>27</sup>

Here, we endeavoured to collect information about data collection on the prevalence and outcomes of gestational diabetes and pre-existing diabetes during pregnancy, and enquired whether screening is offered to all pregnant women or a subset of this population – those at high risk or showing symptoms. Reports in the literature confirm that testing only high-risk women results in overlooking a significant proportion of those with gestational diabetes.<sup>25</sup> Therefore, it is important to obtain a sense of the choices made by countries, and generally in the European region, with respect to screening practices for pregnant women.



## EYE CARE



Diabetic retinopathy is regarded by WHO as a priority eye disease, which can be partly prevented and treated.<sup>28</sup> The complication is caused by damage to the retina as a result of changes in small blood vessels (microvascular modifications) due to diabetes. High blood pressure and sustained high blood glucose levels contribute to these microvascular modifications, which can also result in glaucoma and cataracts. Retinopathy is a complication that arises from both type 1 diabetes and type 2 diabetes.<sup>29</sup> Symptoms, including sudden loss of vision, blurred vision and objects floating across vision, are not noticeable until the condition has reached an advanced stage.

**“ Regular screening provides the best option to prevent or delay the development of diabetes-related eye damage**

As symptoms appear only during the latter stages, restoring any vision loss becomes more difficult. Therefore, regular screening provides the best option to prevent or delay the development of diabetes-related eye damage. Lifestyle changes, such as healthy diet and increased physical activity – can reduce the chances of developing eye complications. Here, we looked at the frequency of retinal screening and whether specialist ophthalmological services are available for the majority of the population with diabetes in each country. We endeavoured to gather information from healthcare professionals and patient organisations on the recognition among people with diabetes of the importance of eye care, screening and treatment. We also explored the question of cost as a barrier to screening and treatment, of particular relevance given the specialist nature of the complication.

Diabetes-related visual impairment and blindness have far-reaching consequences, for individuals and society as a whole. As well as the loss of mobility, earning capacity and general independence, eye damage also has an impact on communities and countries in terms of loss of productivity, on families, increasing need for long-term care, and on society in the form of increased associated healthcare costs. These consequences will result in a growing burden

on health systems, which are already under strain. Given the increasing prevalence of diabetes and the ageing populations in Europe, it is highly likely that we will see an increase in the number of people suffering from diabetes eye damage in the near future. Collecting information on the state of care provision for diabetic eye diseases in Europe has never been so important.

## KIDNEY (RENAL) DISEASE



Diabetic nephropathy is a serious progressive complication of the kidneys resulting from sustained high blood glucose levels and high blood pressure. It gives rise to weakening of the small blood vessels in the kidneys, leading to leaking of proteins (albumin) into the urine. Nephropathy is one of the principal long-term complications of diabetes. People with kidney disease have an increased risk of all-cause mortality, cardiovascular mortality and kidney failure.<sup>30</sup> According to WHO, kidney disease is the leading cause of dialysis and renal transplants in developed countries.<sup>31</sup>

Here, we explored whether or not screening for renal complications is included within national strategies for diabetes and whether certain screening and treatment options are available. In terms of screening, we looked for services to assess microalbuminuria (protein in the urine) and measure blood pressure. Elevated levels of these two parameters in people with diabetes signals increased risk of kidney disease, among other complications. Treatment options outlined are antihypertensive therapies (to reduce blood pressure using medication), renal dialysis in hospitals and at home (to aid filtering blood), and renal transplantation services. In order to obtain an overall picture of renal care for people with diabetes across Europe, it was important to assess broadly the availability of these services and the main options for treatment in each country.

As is the case with other complications of diabetes, regular monitoring of key renal indicators facilitates early intervention resulting in improved long-term prognosis. This is particularly important, as the symptoms of kidney disease do not appear until the latter stages, by which time slowing the rate of deterioration becomes more difficult. Lifestyle changes, such as an improved diet and increased physical exercise, can lower blood pressure and maintain blood glucose levels within stable parameters. This can also be aided by regular monitoring of blood glucose levels.

## STRUCTURED DIABETES EDUCATION



Knowledge and understanding of what diabetes means for each person and the people around them can be valuable to ensure that each individual is able to carry out the best self-care possible. Diabetes education generates empowerment, enabling people to take informed decisions and make the best choices for their health.

Research has shown that self-care has a major impact on the development and progression of diabetes and associated complications. Education for self-management is critical to improve outcomes.<sup>32</sup> An ADA review of standards of diabetes self-management education found a four-fold increase in diabetes complications among people who had not received formal diabetes education.<sup>33</sup> Other research supports the benefits of education on clinical symptoms and outcomes.<sup>34</sup>



**Self-care has a major impact on the development and progression of diabetes and associated complications**

We asked whether diabetes education is offered to all people upon diagnosis and/or periodically thereafter, and whether relatives of those newly diagnosed are also offered diabetes education. Options for respondents included whether education is offered only to people who are unable to manage their condition; and whether education is offered to a family member when a person is unable to manage alone. Stakeholders were also given the option to respond that 'structured education is rarely or never offered; people have to rely on their own resources to learn about their condition'.



## DIABETES SPECIALIST NURSING



The complexity of diabetes and its impact on multiple aspects of a person's life require comprehensive integrated care delivered by a multi-disciplinary team wherever possible.

In this environment, the role of diabetes nurses can be of significant added value as a point of liaison between levels of care, diabetes healthcare professionals and people with diabetes.<sup>35</sup> Specialist diabetes nurses are nurses who, because of their significant experience in a specialised field and their additional training in this field, work wholly in diabetes care as recognised specialists in hospitals and in the community, and as a link between the two.<sup>36,35</sup> Although their competences and fields of expertise are evolving and vary according to national traditions and the organisation of care, their core role remains the promotion of self-management skills in people with diabetes and their families, and support for overall diabetes care.<sup>36,35</sup> While early trials have shown mixed results of the contribution of diabetes nurses to improving patient outcomes, their contribution from the perspective of a person with diabetes has been acknowledged.<sup>36</sup> Additionally, more recent studies found that diabetes specialist nurses contribute to improved care and outcomes while lowering the cost of care for health systems.<sup>35,37</sup> These findings were confirmed by other studies highlighting the role of adequately trained nurses in improving patient outcomes.<sup>38</sup> There is also scope for nurses to be involved in research and specific policy development.

However, as mentioned above, the status, training, fields of expertise and role of diabetes nurses vary widely across European countries. We investigated whether or not diabetes nursing is a recognised speciality and what training (initial, continuous or both) is provided for nurses working in diabetes care. Information was also gathered on the specific fields in which nurses working in diabetes are involved. These include the definition of treatment regimens, prescription of medication or medical devices, individual care management, education for self-management, patient and family behavioural change, problem solving in diabetes management, and psychosocial support.

### “ More recent studies found that diabetes specialist nurses contribute to improved care and outcomes

Stakeholders were asked for information about the overall role of nurses in diabetes care. This was assessed according to population (all people with diabetes or specific groups, such as people with type 1 diabetes, type 2 diabetes or pregnant women) as well as the setting in which they work (general as opposed to specialised healthcare facilities, outpatient or inpatient).

An academically accredited training programme exists for nurses working in the speciality of diabetes (FEND ENCUP). The programme is fully funded by FEND (visit the FEND website for more details).





## METHODOLOGY

This publication was researched, prepared, revised and finalised between January and October 2014.

Responses to a questionnaire constituted the primary source of information. The questionnaire was developed through consultations involving the *Policy Puzzle* steering committee, which comprises a team of multidisciplinary experts in the field representing each of the contributing organisations, and the research team. Topics were chosen to highlight particular areas of diabetes care, prevention, treatment and complications. Once the questionnaire was finalised, it was translated into 21 different languages. Checks were made to ensure the accuracy of the translations and the questionnaire was formatted for dissemination online and on paper. Questionnaires were sent to three different stakeholder groups: patient organisations, healthcare professional organisations, and Ministries of Health and/or national health agencies.

Considerable efforts were made to identify the appropriate individuals within these organisations to ensure that the questionnaire was completed by those most knowledgeable about each country's diabetes activities. There were slight variations in the questions in order to collect different viewpoints from a variety of stakeholders, and thus obtain a better overall understanding of diabetes activities in every country. Extensive desk research was conducted through multiple platforms to gather as much publicly available information as possible to supplement our understanding of the topics covered in the questionnaire.

Upon receiving the responses, initial cross-analysis was conducted to use the information gathered to develop follow-up interviews. These were designed to dig deeper into the answers provided in the questionnaire and obtain a more thorough understanding and analysis of the current situation in diabetes across Europe. Information gathered from all sources was then collated and analysed using multiple approaches.

The country profiles were constructed very carefully, taking into account all the information that had been collected and researched. Where primary information was lacking, profiles were based on the best available information.

We recognise that there may have been new developments in some countries while this audit was conducted, there may be a need for further explanation and clarification. We welcome any feedback. Please send comments to [idf-europe@idf-europe.org](mailto:idf-europe@idf-europe.org).

## STRUCTURE OF THE PROFILES

This audit comprises the analysis of the information collated at the European level, 47 individual country profiles, followed by the conclusions and recommendations.

Each country profile is presented on two pages and begins with a brief summary of the overall picture, as well as any noticeable developments since the previous edition of the *Policy Puzzle*, published in 2011. Detailed information is then provided, where possible, on national plans and prevention policies, followed by any pertinent quotes or statements arising from the information gathered. Current figures on prevalence and incidence are presented from the *IDF Diabetes Atlas* as well as nationally reported data, and the existence or not of a national diabetes register is reported. Information on areas of prevention is also presented in the form of symbols, which correspond to those used in the analysis. The country profiles are completed with information on care provision practices in the topics outlined above. Each profile includes brief details of the information sources, and outlines any planned actions or hopes for the future development of diabetes-related activities.



### Data sources

A full list of all organisations that kindly provided information for this edition is available in the annex (by country)

# EUROPEAN ANALYSIS

## EPIDEMIOLOGY AND INFORMATION SYSTEMS

### DIABETES PREVALENCE

The *IDF Diabetes Atlas*<sup>6</sup> indicates that **56.3 million European adults were living with diabetes** in 2013 – **8.5% of the region's adult population**. This number is set to **rise to 68.9 million by 2035**. When looking at comparative or age-standardised prevalence, Turkey has the highest prevalence in the region with 14.8% of the adult population, followed by TFYR Macedonia (10.0%) and Serbia (9.9%).

At the other end of the scale, countries with the lowest prevalence are the Republic of Moldova (2.4%), Azerbaijan (2.5%), Georgia (2.5%), and Ukraine (2.5%). The graph on the next page describes the variations in prevalence across the 47 European countries covered in this edition of the *Policy Puzzle*.

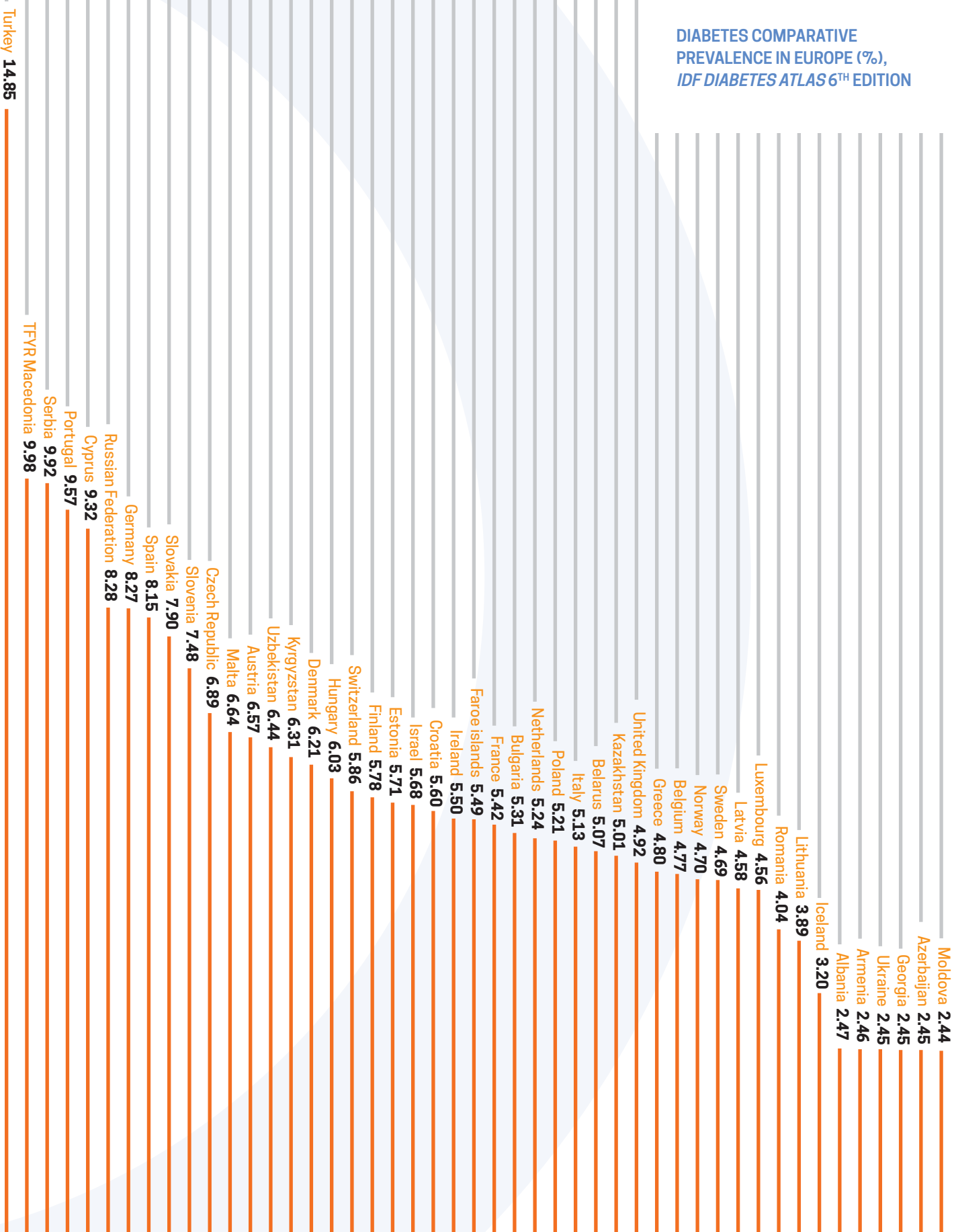
Overall, there is no question that the burden of diabetes is increasing throughout Europe. This epidemic, together with the region's ageing population, will lead to spiralling healthcare costs and place severe strain on national health systems.

However, although the growth of the diabetes burden in Europe is undisputed, the scarcity of comparable data makes it difficult to quantify this increase. Developments in the methodologies used in the *IDF Diabetes Atlas*<sup>6</sup> also prevent comparisons with previous estimates. Since 2011, only three countries – Turkey, Germany and Spain – have issued updated surveys that facilitate such comparisons. All confirmed a countrywide increase in diabetes prevalence.<sup>39</sup>

### About epidemiological data

Although we requested reported national prevalence in this survey, these data cannot be directly compared between one country and another due to variations in methodology, scope, year of reference, and/or definitions. Most national data are derived from national health systems or national registries and, therefore, cover only diagnosed or registered cases of diabetes. The *IDF Diabetes Atlas*<sup>6</sup> data are based on a single methodology for all countries and estimate the overall burden of diabetes in the adult population. So for comparability, we use *IDF Diabetes Atlas*<sup>6</sup> data throughout this publication.

DIABETES COMPARATIVE  
PREVALENCE IN EUROPE (%),  
IDF DIABETES ATLAS 6<sup>TH</sup> EDITION





Iceland

Faroe Islands

Norway

Sweden

Denmark

Ireland

United Kingdom

Netherlands

Belgium

Germany

Luxembourg

Poland

Czech Republic

Slovakia

France

Switzerland

Austria

Hungary

Slovenia

Croatia

Serbia

Portugal

Spain

Italy

Albania

Malta

# NATIONAL PLANS FOR DIABETES IN EUROPE

## PREVENTION POLICIES

OBESITY AND OVERWEIGHT	YES	NO	N/D
HEALTHY FOOD AND DIET	YES	NO	N/D
PHYSICAL ACTIVITY	YES	NO	N/D
SMOKING	YES	NO	N/D
HARMFUL USE OF ALCOHOL	YES	NO	N/D

## NATIONAL DIABETES PLAN

	NO PLAN
	IN PROGRESS
	EXISTING PLAN



## Case study: collecting data on diabetes and pregnancy

The 2011 edition of the *Policy Puzzle* highlighted the key issue of diabetes and pregnancy in women's and child health. Collecting information on the prevalence and outcomes of gestational diabetes and pre-existing diabetes in pregnancy is important in order to identify the extent of this problem and assess the effectiveness of current health services in improving outcomes among pregnant women with either of these conditions.

Of the 47 European countries surveyed, **seven reported collecting data on both the prevalence and outcomes of pre-existing and gestational diabetes in pregnancy. In comparison, 12 countries stated that they do not collect information on the prevalence or outcomes of gestational and pre-existing diabetes.** Overall, a total of 17 countries indicated that they collect information on the prevalence of gestational diabetes – making these the most commonly collected data in this field.

Different countries described different ways of collecting such data. Some gather data from their perinatal health information systems, as in Estonia and Hungary, or from national health insurance institutions, as in Poland. Others, including Norway, rely on regional data collection projects to monitor the prevalence and outcomes of gestational diabetes. However, our survey suggests that **data on diabetes and pregnancy have not been fully integrated into national diabetes registers.** The share of countries collecting data on diabetes and pregnancy does not differ from countries that report having a national register for all diabetes cases versus countries that report not having such a register. Having a national diabetes register appears not to impact on the type or types of data collected on diabetes in pregnancy.

These findings tend to moderate those regarding national diabetes registers: although a growing number of countries are establishing a national register to monitor diabetes, findings relating to data collection on diabetes and pregnancy raise questions as to whether these registers are comprehensive and cover all aspects of diabetes.

The findings of the *Policy Puzzle* survey confirm that European countries have unequal capacities to monitor the evolution of the diabetes epidemic at the national level. While the majority of European countries were able to provide some prevalence data, incidence was less well reported. A total of 24 countries – more than half of Europe – could not provide this information; one country's reported incidence was inconclusive due to greatly varying responses. Even in countries where prevalence and/or incidence data were reported, the type and accuracy of these data vary widely. For example, two countries indicated that the latest prevalence figures available dated from 2006 and 2008 respectively. Other countries indicated that their primary source of information is their national diabetes register, which was then described as incomplete (see next paragraph).

### NATIONAL DIABETES REGISTER



A total of **30 countries reported having some kind of national diabetes register.** The majority of these registers are monitored by national health authorities or national statistics offices. In other cases, including Luxembourg and Iceland, this register is based on the records of the national reference hospitals. Further details on each register are available in the country profiles.

Of the 13 countries that reported having a national diabetes register for all people diagnosed with diabetes, only two – Israel and Sweden – reported having a register that was complete. This means that more than 85% of national registers were considered by stakeholders to be incomplete. Moreover, a total of 12 countries have a national diabetes register only for certain population groups, mainly children. And less than a quarter of these registers were reported to be complete. Finally, five other countries reported having an

incomplete register that provides no details of the target population. Overall, among the 30 countries that reported having any kind of diabetes register, **more than 83% considered these registers to be incomplete.**

The data collected illustrate the **difficulties associated with establishing a national register and ensuring this is maintained complete.** The challenges are **political, legal, structural and financial.** Two countries – the Netherlands and Cyprus – explained that policies or legal frameworks on privacy and protection of personal data are preventing the creation or countrywide extension of registers. Similarly, Finland and Switzerland reported that their current legislation prohibits the creation of disease-specific registers.

At the structural level, the organisation of the health system or diabetes care creates further difficulties to establish and maintain a comprehensive national register for diabetes. In some countries, such as the UK and Spain, data are collected at the regional level (autonomous regions in Spain and nations within the UK) and are collated only periodically via health surveys. In countries where diabetes care is divided across healthcare providers and levels of care, respondents cited problems obtaining information from these various levels and stakeholders. In Portugal and Cyprus, for example, private healthcare providers are not required to share patient information, while in Denmark, reporting by healthcare professionals may vary based on practitioners' agreements with their regional authorities. Improved communications between different healthcare providers would facilitate complete and regularly updated registers.

## **“ The challenges are political, legal, structural and financial**

In a few countries, including Estonia, financial constraints have hampered efforts by patient and healthcare professional organisations that have tried to persuade the authorities to develop a national register.

Nonetheless, two countries – Bulgaria and Greece – reported being in the process of developing a national diabetes register, while stakeholders in other countries, including Albania, Finland and Switzerland, reported discussing this possibility with national authorities. While some countries do not have a national diabetes register (as defined on page 17), or have registers that cover only a segment of the population

living with diabetes, some gather relevant data on diabetes via other health information collection systems. Six of the 17 countries that do not have a national register reported having local or regional diabetes registers. Another four countries collect data on diabetes via their general health information system, regular health surveys or systems that track healthcare expenditure and reimbursements.

A comparison of data from the previous *Policy Puzzle* suggests that there has been **an absolute increase in the number of countries with a national diabetes register, up by seven since the 2011 edition.** The fact that some registers are being developed and/or extended is encouraging: many respondents highlighted the importance of having such a national tool in order to collect valuable, accurate data on the burden of diabetes and with a view to improving future distribution of relevant health resources and services.

## **POLICY**

### **NATIONAL PLANS**



The majority of European countries expressed commitment to, or have taken steps towards, a comprehensive policy response to diabetes. Yet their approach and the degree of policy development vary widely. **A total of 30 countries are implementing a national plan addressing diabetes specifically or as part of a plan for NCDs. Another 10 countries currently do not have such a plan but have announced one for the near future.** Among the seven countries with neither a plan in place nor one under development, four – Albania, Germany, Luxembourg, UK – have either joined a European or global initiative for the prevention, control or treatment of diabetes; or have adopted a national resolution on diabetes or specific programmes related to diabetes. In the other three countries – Estonia, Iceland, Latvia – no specific policy tool for diabetes has been adopted and the disease is covered by general public health and healthcare strategies. The nationwide diabetes burden was mentioned many times as one of the reasons for adopting a national plan for diabetes. However, no direct correlation could be established between a country's diabetes prevalence and whether or not it had a plan. **This suggests that the adoption of such a policy tool to address diabetes has more to do with national political will and national health policy framework than with the burden of disease alone.**

Looking at the 30 countries implementing a national plan for diabetes, there appears to have been a change in

strategies to address diabetes. The absolute number of countries currently implementing a national diabetes plan fell from 24 in 2011<sup>19</sup> to 20 in 2014. This is mainly the result of **a shift from adopting a national diabetes plan to a national NCD plan covering diabetes**. While most of the 24 countries that had a national diabetes plan in 2011 have maintained or are in the process of renewing that plan, over 40% of them either are developing a national NCD plan for two or more NCDs including diabetes, or adopted such a plan when their diabetes plan ended. Additionally, three of the five countries that adopted a national diabetes plan in the last three years also have an NCD plan covering diabetes.

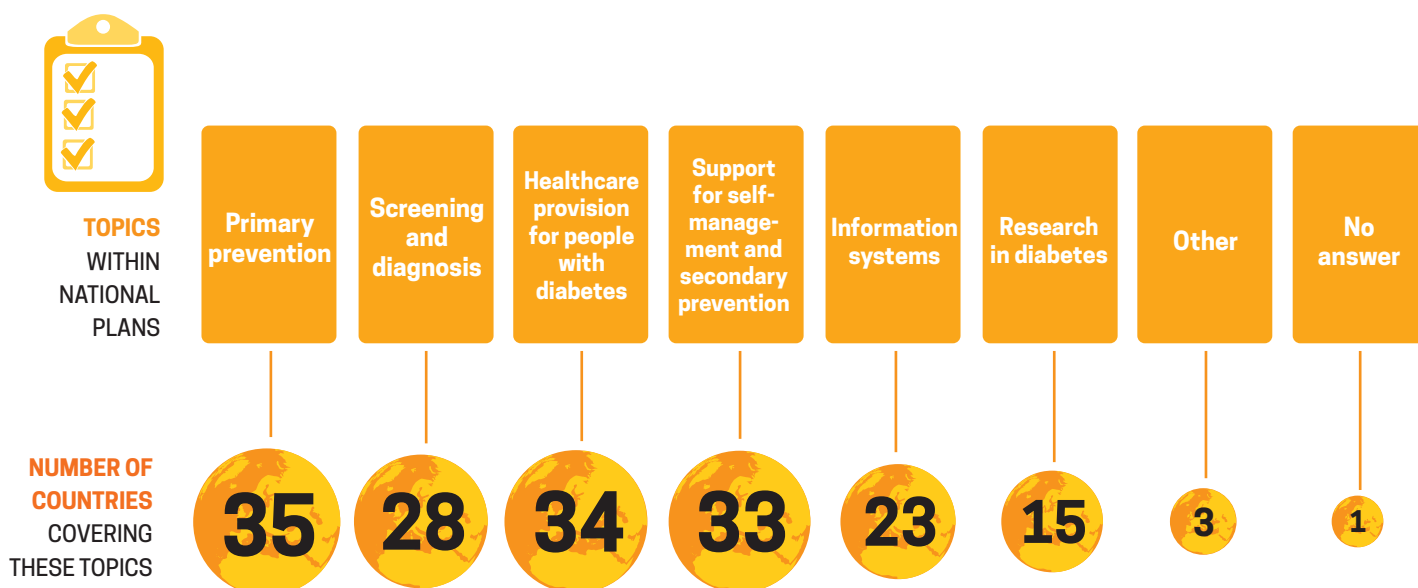
The same trend was found among the 11 countries that reported working on a national diabetes plan in 2011. Of these 11 countries, only Serbia adopted a national diabetes plan as announced, while Poland and Armenia opted for an NCD plan including diabetes. Six of the 11 countries are still developing the plan they announced in 2011; two of them, however, reported discussing an NCD plan rather than a diabetes plan. It should be noted that two of the countries – Germany and Iceland – that reported discussing a national diabetes plan in 2011 appear to have decided against this option.

Currently, a total of **15 European countries have a national diabetes plan. Five have both a diabetes plan and a plan for NCDs including diabetes; and 10 others address diabetes only under the umbrella of an NCD plan**. A similar trend can be found among the 10 countries that are not currently implementing such a plan but have announced one for the near future. Of these countries, four reported developing only a national diabetes plan, another four reported working on both types of plan to address diabetes and two others have opted for an NCD-only approach.

**There is no significant difference in the number or types of fields covered by national NCD plans compared with national diabetes plans**. However, the number and types of fields covered **vary between countries**. Most of the countries currently implementing one of these plans cover five or six different fields – the most common being **primary prevention, healthcare provision for people with diabetes or NCDs, support for self-management and secondary prevention, and screening and diagnosis of diabetes or NCDs**. Between 80% and 90% of countries with or which have announced a national plan for diabetes cover these fields. On the other hand, less than 40% reportedly include or plan to include research within their national plans – making diabetes research the least commonly covered field of those surveyed.

The choice of stakeholders involved in the development of these plans reflected these findings: Ministries of Research and Sciences were reportedly consulted in only a handful of countries with a plan. **The national health authorities (Ministry of Health and/or national health agencies) were clearly identified as the leading institutions in the development of any national plans, including diabetes**. It was reassuring to note that **healthcare professional and patient organisations are or have been involved in such discussions in almost all countries** – with healthcare professional organisations reported as being slightly more often involved than patient organisations. Conversely, the industry was reportedly consulted in less than 25% of countries.

National health authorities in 31 countries identified the strongest sources of information for their current or future national plan for diabetes. The **majority identified European or global strategies and guidelines on diabetes**





## Paying for the best: cost and cost analysis of national plans

**The difficulties encountered in 2011 to collect adequate cost data on diabetes policies were found again in 2014. Barely a third of the national health authorities that were asked about the budget allocated and spent on their national plan for diabetes have provided such information. Even fewer (25%) – provided budget estimates for prevention policies.** There may be many issues behind such difficulties. For example, in countries with decentralised health systems, including Spain and the UK, budgets for diabetes policies are a regional competence (of each of the home nations in the case of the UK). Thus, obtaining a country-wide estimate may not be possible. In other countries, including Slovenia, a decision was taken to implement the national diabetes plan using existing structures and existing collaborating partners. As a result, the costs associated with the plan are covered by the general budgets of these structures and stakeholders. In the field of prevention, policies relevant to diabetes are often spread across different plans and programmes, as is the case in the Czech Republic and Finland. Not only do these factors make it difficult to obtain national estimates of budgets allocated to diabetes and prevention policies, they also raise questions over the strength of the figures provided by some national health authorities.

These difficulties may also shed some light on the low number of cost-effectiveness analyses reported in national plans and prevention policies or campaigns. Less than 10% of the national health authorities that were asked about the different monitoring and evaluation components of their policies were able to confirm the use of such analyses. Given that the cost of diabetes and the need to reduce health expenditure related to this condition were widely reported as one of the key factors motivating the adoption of diabetes and prevention policies, it was surprising to see that so few countries confirmed the use of such analytical tools in assessing the impact and effectiveness of their policies.

**or NCDs – confirming the role of the will of international groups in engendering national action.** The roles of various national sources, including results from previous national plans, from research in diabetes and from national situation analyses on the epidemic, were also highlighted in about a third of these countries.

Our survey suggests that the choice of sources of information used in the development of a national plan varied according to the type of national plan being devised. Moreover, the share of countries **identifying national sources (the results from a previous national plan, diabetes research or national situation analysis) as the main source of information was higher among countries with a national diabetes plan than among those using an NCD plan.** In contrast, compared with those using a national diabetes plan, a larger share of countries opting for an NCD plan reported European and international sources (European or global strategies and guidelines, and exchanges with other countries) as their principal sources of information.

**Gathering reliable information on monitoring and implementation of national plans for diabetes in Europe was problematic.** Among the 31 national health authorities that were asked about the monitoring and evaluation components covered in their plans, only 22 were able to provide any information. In 2011, the majority of European

countries with a national diabetes plan reportedly lacked monitoring and evaluation systems to follow the plan's implementation and progress achieved.<sup>19</sup> When surveyed again in 2014, only a small majority of these countries were able to confirm the inclusion of monitoring and/or evaluation components within their plans. The comprehensiveness and strength of these monitoring and evaluation mechanisms also vary from one country to another.

**“ Gathering reliable information on monitoring and implementation of national plans for diabetes in Europe was problematic**

For example, less than half of the countries surveyed on their plan's monitoring system confirmed having a baseline reflecting the situation before the implementation of the plan. While measurable indicators per objective and punctual evaluations were reported slightly more often, time-bound targets and milestones were reportedly missing in a third of these cases. Cost-effectiveness analysis of strategies and protocols was mentioned in only two cases. Overall, only one country reported that its national plan includes all the key elements of a strong

evaluation system. The comprehensiveness of the monitoring and evaluation mechanisms in a plan does not appear to be affected by the type of national plan – NCD plan or national diabetes plan – chosen by European countries to address diabetes. While individual monitoring and evaluation components may be reported more often in one or the other, neither type of plan systematically includes a more comprehensive monitoring and evaluation system than the other.

These conclusions are likely to be affected by the low availability of data highlighted above. They also echo the findings of other works in this field (see country profiles for references), suggesting a **continued overall weakness on this issue in national diabetes policies, despite marginal improvements.**

**The lack of publicly available or independent information on the progress and implementation of plans is reflected in the appraisals made by stakeholders in the field.** Many of them reported relying on their members' feedback to assess diabetes policy; only a minority appeared able to rely on independent studies or evaluations. In many of the 40 countries implementing or developing a national plan for diabetes, the lack of reliable evidence renders much of the information provided by healthcare professional and

**“ Gathering reliable information on the monitoring and implementation of these programmes and policies was difficult**

patient organisations biased or, in some countries, contradictory. Additionally, the differences across countries in the status of national plans – from plans that are still under discussion or have just been adopted to plans that are in their final year of implementation – also make assessing and comparing their implementation difficult. In some cases, certain details of these national plans are unavailable to the public or all stakeholders. National health authorities in 31 countries were asked about the budget allocated to their current or future national plan for diabetes. Of these, only 10 were able to provide an estimate. For the reasons described above, it was not possible to draw regional conclusions regarding the implementation of national plans for diabetes. Assessment for each country is available in country profiles.

## PREVENTION



**Instruments for diabetes prevention are almost universally present in Europe.**

Although they may be designed to address key risk factors rather than diabetes itself,

**primary prevention policies or campaigns** addressing obesity and overweight, healthy eating, physical activity, smoking **or** harmful use of alcohol were reported in 45 European countries. Only two countries – Albania and Georgia – did not report having such policies in place, although both countries are said to be developing these policies for the near future. It should be noted that while one of the countries is developing a national plan for diabetes, neither has a national plan in place.

Even in countries where such policies or campaigns exist, **the structure and content of these may vary.** A total of 41 of the 47 European countries surveyed have adopted prevention policies or campaigns at the national level. In 17 of these countries, national provisions are supplemented with regional policies or programmes. In the remaining four countries – Germany, Israel, Sweden, UK – primary preventive measures or policies have been adopted only at the regional level (of the home nations within the UK). While Israel is currently discussing the nationwide scale-up of these regional policies, in Germany, Sweden and the UK prevention is by law a regional or local competence, which explains the absence of a national programme or policy.

**More than 80% of the primary prevention policies or programmes currently being implemented in Europe cover the five principal risk factors for diabetes.** Another 15% cover at least three of these risk factors. Having national or regional policies does not appear to impact on the number or type of risk factors addressed in policies or campaigns in each country. Whether such an impact exists at the local level within each country was not addressed in this survey and is a question for further research. The complex structure of prevention policies in the different countries may also explain why only a quarter of the 35 national health authorities surveyed were able to provide an estimate of the national budget allocated to prevention.

In terms of the different risk factors for diabetes addressed by national or regional policies and campaigns, smoking is the most common, followed by healthy eating, and obesity and overweight. Harmful use of alcohol was reported to be the least commonly addressed; it is, nevertheless, covered in more than 85% of European countries.

As with national plans, gathering reliable information on the monitoring and implementation of these programmes

and policies was difficult. Of the 35 national health authorities that were surveyed on the specific monitoring components of their prevention policies or campaigns, more than a quarter were unable to answer. Of those that did, less than two thirds reported monitoring the impact of their policies or campaigns with pre-defined indicators and only two countries reported assessing the cost-effectiveness of these policies and related interventions; one other reported different regional practices across the country. These findings are likely to be affected by missing data. Nonetheless, they reflect and reinforce those reported above regarding national plans: **while progress has been made in terms of the adoption of policy tools to prevent, control and treat diabetes, the monitoring and evaluation of these policies is lagging behind.**

As with national plans, shortcomings in the evaluation of prevention policies and campaigns are limiting the capacity of stakeholders in the field to provide evidence-based assessments of the implementation of prevention policies and campaigns. Again, certain details of these policies or campaigns may not be available to the public or shared with all stakeholders. Additionally, the regional variations in policies and the distribution of provisions for prevention across various programmes, policies and campaigns constitute an added level of complexity. Therefore, it was not possible to draw regional conclusions on the implementation of provisions for prevention relevant to diabetes. Assessment for each country is available in country profiles.

## CARE PROVISION



### GUIDELINES IN DIABETES

**All 47 countries have at least some guidelines on diabetes.** However, the

nature, scope and implementation of these guidelines are uneven across the region.

Of the 43 countries that were surveyed on the use of diabetes guidelines, 32 use international guidelines, 27 use guidelines from national health authorities, and 33 cited guidelines from healthcare professional organisations.

**Most countries in Europe tend to combine different types of guidelines:** 13 countries – almost a third of those surveyed – reported using guidelines from all three sources; seven countries – about 15% of the region – reported using only one type of guideline. Additionally, it appears that many countries use international guidelines as a base and adapt these to their national settings.

When asked about the topics covered in their guidelines, 40 countries (out of the 43 that responded) reported having

guidelines on healthcare pathways and management of type 2 diabetes. Thus, **type 2 diabetes care is the most commonly addressed issue in diabetes guidelines – reflecting the overall trend in the diabetes epidemic in Europe and worldwide.** Screening and diagnosis of



**About a third of European countries reported having guidelines covering all topics relevant to diabetes prevention, care and management**

diabetes and diabetes complications came second: 38 countries include screening and diagnosis in their guidelines. Conversely, structured education for people with diabetes and primary prevention strategies were the least commonly covered topics in European guidelines, with less than 60% of countries reporting the use of guidelines on these topics. About a third of European countries reported having guidelines covering all topics relevant to diabetes prevention, care and management – from primary prevention and screening to healthcare pathways and self-management for different types of diabetes and diabetes-related complications.

**The lack of monitoring of guideline implementation remains a weakness for most European countries. Only seven countries – less than a sixth of the region – reported having monitoring protocols in place to assess the implementation of their guidelines;** 21 countries responded that they did not. Unfortunately, this information could not be clarified in more than 19 European countries, either because respondents provided conflicting responses, or because they were unable or unwilling to answer.

As with diabetes policies, **guideline implementation clearly remains an issue.** In more than a third of countries, stakeholders reported issues affecting the implementation of recommendations or guidelines in at least one field of diabetes care. Further details can be found in the case studies below and in the country profiles. In more than 40% of countries in Europe, we encountered difficulties collecting detailed information on guidelines among healthcare professional organisations and national health authorities, as well as discrepancies between these respondents within a same country. This points to uneven knowledge and irregular dissemination of guidelines. Adoption and implementation of guidelines by all stakeholders is key in order to deliver high-quality diabetes care.

## CASE STUDIES

### DIABETES AND PREGNANCY

As in 2011, **obtaining reliable information on the data collected on diabetes and pregnancy in each of the 47 European countries was problematic:** in 15 of the 47 countries surveyed, respondents either provided inconclusive data or reported being unable to provide this information. Of the 32 countries where the information was provided and confirmed, 15 reported no routine collection of any data on diabetes and pregnancy; less than a quarter routinely collect both prevalence and outcome data on diabetes and pregnancy. Data on the prevalence of gestational diabetes was reported to be routinely collected in 17 countries – over half the countries that provided data on this topic, or more than a third of the 47 countries surveyed in this edition of the *Policy Puzzle*. In contrast, outcome data on both gestational diabetes and pre-existing diabetes during pregnancy were reported as being collected in barely a third of the countries that provided this type of information – about one fifth of the European region. Additionally, as already highlighted in 2011, **the methods and motivation behind the collection of data remain unclear.** Follow-up interviews with national stakeholders tended to confirm this: stakeholders were able to state the specific objective of the collected data in only a minority of cases.

These findings raise further questions over the guidance and monitoring of national clinical practice in the field of diabetes and pregnancy. Diabetes screening practice during pregnancy is a field where there is no European or international consensus on best practices,<sup>40,41,42</sup> and **no clear relation can be established between screening practice for diabetes in pregnancy and data collection practices across Europe.** Additionally, our survey confirmed that the **approach to diabetes screening in pregnancy remains diverse across the continent.** Without going into the details of the types of screening methodology and clinical thresholds used to detect gestational diabetes and previously undiagnosed diabetes in pregnant women, the target population for diabetes screening in pregnancy alone varies from one country to another. Of the 42 countries where conclusive information was collected, **70% recommend and/or routinely offer systematic screening to all pregnant women for diabetes.** The remaining 30% use a targeted approach and recommend offering diabetes screening only to pregnant women with high risk factors or, in some cases, pregnant women with symptoms of diabetes.

While in theory European countries appear to have included diabetes screening as a routine test for all or some pregnant women, our survey confirms the findings of

previous research,<sup>41</sup> **highlighting in-country variations in actual diabetes screening practices among pregnant women.** Such local differences may result from changes in national guidelines that have yet to be comprehensively implemented – as in Kyrgyzstan – or barriers to the implementation of these guidelines (access issues, low awareness or resource constraints) as is the case in Georgia and Serbia. Moreover, differences may be due to variations in the training and practices of healthcare professionals – especially in countries without national guidelines on diabetes screening in pregnancy, such as France and Greece. Further details can be found in individual country profiles.

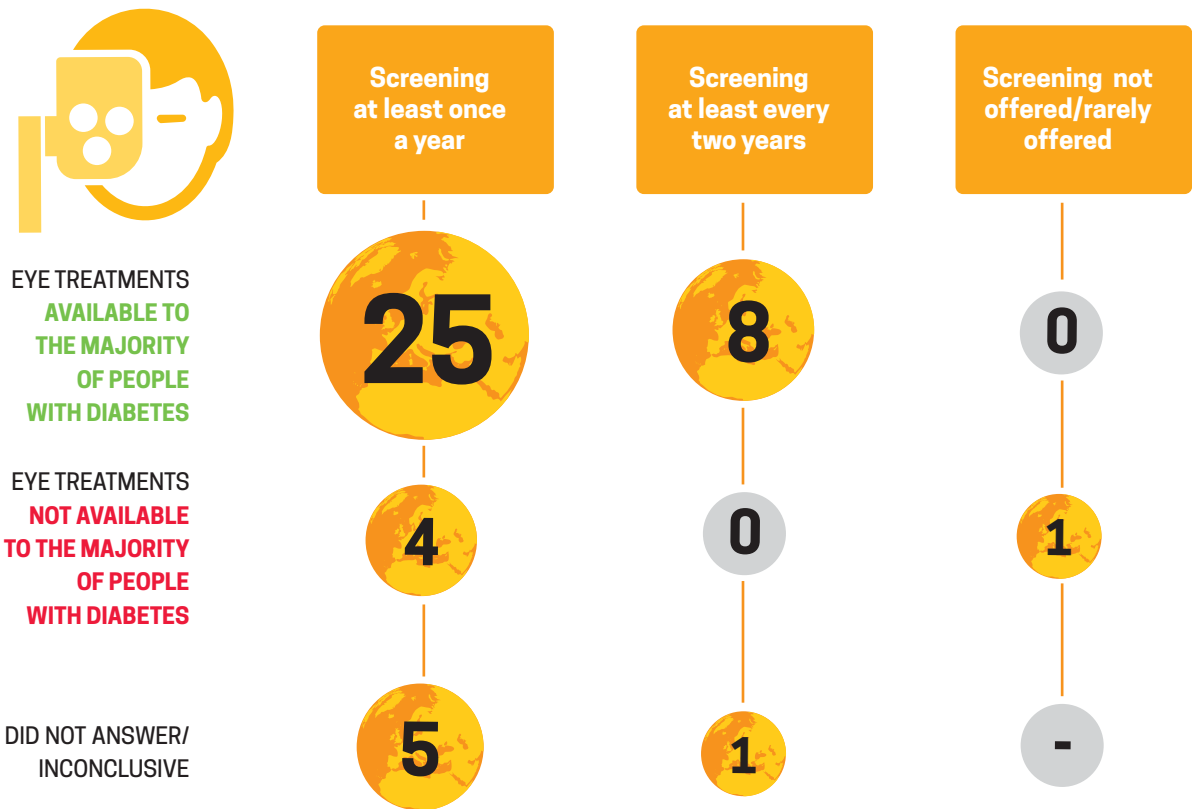
### EYE CARE

**Screening for diabetic eye disease (retinopathy) is conducted in the majority of countries in Europe; specialist ophthalmological treatment services are available in most.** However, there are **noticeable inequalities in terms of access** to eye services both within countries and across the continent.

Two main trends were identified relevant to the frequency of eye screening among people with diabetes in Europe. Of the 43 countries that provided this information, **34 – almost three quarters of Europe – reported offering or recommending screening at least once per year** to all people with diabetes. Nine other countries – about **20% of the region – offer screening every two years.** One country, Bulgaria, reported that screening is rarely offered to people with diabetes because, as some stakeholders explained, screening is recommended only once an eye condition manifests. Overall, **the implementation of these recommendations is uneven across Europe,** as shown in the country profiles. It should also be noted that this survey assessed only the frequency and availability of eye examination; it did not evaluate the quality or type of examination performed.

**“ 36 of the 41 countries that provided information reported specialist ophthalmological treatment services being available to most people with diabetes in the country**

Regarding eye treatment for people with diabetic eye diseases, 36 of the 41 countries that provided information reported specialist ophthalmological treatment services being available to most people with diabetes in the country – 70% of all the countries surveyed. Only five countries indicated this not being the case. However, as the individual country profiles further explain, the availability of services **does not always translate into effective access** to services for people with diabetes.



Screening recommendations and service availability appear strongly related. As the image above shows, **the majority of European countries offer yearly screening for retinopathy and readily available eye treatment services to the majority of people with diabetes.** Additionally, of the nine countries offering eye screening at least every two years, eight have eye treatment services available. The availability of such services in the ninth country, Portugal, was difficult to assess due to regional differences. Interestingly, the four countries that recommend yearly eye screening but report availability issues regarding eye treatment services also report difficulties and inequalities in the actual implementation of their recommendation for yearly screening. Unsurprisingly, the only country that does not offer regular eye screening for people with diabetes also faces difficulties to ensure the availability of eye treatment services.

These findings highlight similar gaps to those found when looking at guidelines and their implementation. The majority of countries recommend regular eye examinations and also have guidelines for both the screening and treatment of diabetes-related complications, including eye disease (see also 'Guidelines in diabetes'). From a national perspective, most European countries also reported providing eye screening and treatment services. Various stakeholders were asked for their appraisal of eye care in their respective countries. The variety of opinions given for individual countries makes it difficult to provide regional trends.

However, these assessments highlight that **almost two thirds of the countries that reported recommending regular screening and providing treatment services also reported some in-country variations in this regard.** Overall, eight European countries reported regional inequalities in the uptake and availability of eye services, while four highlighted uneven access to screening and treatment between people with diabetes who are followed in primary care (often people with type 2 diabetes) and those followed in specialised care settings. In five countries, diabetes stakeholders reported that inadequate staffing hampers access to eye screening and care. The key inequality issue identified by associations and/or the literature<sup>43</sup> was affordability. Stakeholders in 12 countries identified cost as a potential barrier to treatment for some people living with diabetes, due to either inadequate financial coverage by the healthcare system or low availability of services in the facilities covered by this system. Further details can be found in each of the country profiles.

Most countries reportedly provide adequate levels of care and screening for retinopathy. However, the evidence of this survey indicates a lack of coherence within and between countries regarding the availability of these services and further efforts must be made to ensure equitable access to high-quality eye screening and treatment services across Europe.

## RENAL CARE

Screening options for kidney complications are well utilised across Europe, although renal screening is not always included in national plans for diabetes. Nonetheless, inequalities exist in access to renal treatment services across the continent.

Information on provision for renal screening for people with diabetes in national plans was difficult to obtain, suggesting a lack of clear publicly available information on this issue. The few data collected suggest that renal screening for people with diabetes is more often addressed outside national plans for diabetes than within. **Of the 39 countries that have or will have a national plan for diabetes and provided this information, only 18 confirmed that renal screening is included in their plan.** This finding may be affected by the low availability of data: only four countries stated directly that their national plan for diabetes does not include renal screening; 15 of the countries that have or will have national plans for diabetes did not provide or could not provide this information; in another four countries, different stakeholders provided contradictory answers that could not be clarified. It should also be noted that responses to this question had to be re-evaluated carefully during the analysis. It appears that several respondents misunderstood, and reported on the overall availability of renal screening services for people with diabetes rather than on the inclusion of such services in the national plan for diabetes. Therefore, the figures described above take into account only countries that reported having or being about to have a national plan covering diabetes.

The lack of data also affected our findings regarding the overall availability of renal screening and treatment options across Europe: 17 countries did not provide or could not provide this information. **However, the information collected in the remaining 30 countries suggests that while screening options are reported to be available throughout most of Europe, the availability of treatment options – especially the most expensive, such as transplantation – is much more limited.** Overall, 19 countries – more than a third of the continent – reported all the screening and treatment options surveyed being available. A total of 35 countries confirmed the availability of assessments for proteinuria and blood pressure measurements. The availability of antihypertensive therapies in 33 countries and treatment options, such as renal dialysis in hospitals in 33, was also encouraging – covering some 70% of Europe. **However, other treatment options for people with diabetes-related kidney disease were reported to be far less frequently available.** Renal dialysis at home was reported to be available in about 40% of European countries, while kidney transplantation was reported to be available in

barely half the 47 countries surveyed. **Generally speaking, fewer renal screening and treatment options were reported to be available in Eastern Europe – especially in former Republics of the Soviet Union – than in Central and Western Europe.**

Further information suggested significant variations in **real access to these different screening and treatment services.** In countries where some options were reported to be unavailable, general access issues and **cost barriers were highlighted in almost half of the cases.** Even in the 19 countries in which reportedly all screening and treatment options surveyed are available, discrepancies in accessibility may remain an issue. Disparate and long waiting times were reported in the UK and Italy. The availability and provision of certain options, like transplantation or dialysis at home, were also said to be limited in Romania and Italy.<sup>44</sup> It should be noted that while our survey evaluated the overall availability of different screening options, it did not collect information on the frequency of screening or the uptake of renal care services.

### **Gaps remain to be filled to ensure universal availability of renal treatment**

**Overall, renal screening appears to be almost universally available in Europe, although the way it fits into existing policy tools for diabetes is often unclear. Gaps remain to be filled to ensure universal availability of renal treatment and guarantee equitable access to renal screening and treatment services for people with diabetes throughout Europe.**

## STRUCTURED EDUCATION

The majority of European countries provide some form of structured education (diabetes education) to some or all people with diabetes. However, significant gaps remain to ensure adequate access to diabetes education throughout the lifetime of all people with diabetes.

The provision of diabetes education upon diagnosis appears to be relatively common across the region. **A total of 33 countries – around 70% of Europe – offer or recommend offering diabetes education to all people with diabetes upon diagnosis.** Four of these countries offer education to at least one family member of people who are newly diagnosed. It was interesting to find that of the 33 countries that confirmed offering education to all people with diabetes upon diagnosis, eight also reported that in reality diabetes education is rarely offered, meaning that there appear to be differences between recommendations and practice.

Overall, this survey helped to identify two gaps at the European level: **the continuity of diabetes education and its provision to family members**. As mentioned above, only four countries offer diabetes education to at least one family member, and eight other countries – less than 20% of Europe – reported offering such education to family members only when the person with diabetes is unable to self-manage. Less than a quarter of countries in Europe recommend that diabetes education should be offered on a regular basis throughout a person's life. Another quarter reported that diabetes education should be offered only when a person's treatment regimen is changed or his or her glycaemic control is inadequate. Additionally, 14 countries – nearly a third of responding countries that provided this information – stated that despite recommendations, diabetes education is in fact rarely offered to people with diabetes, who have to rely on their own resources to learn about their condition.

These findings highlight the issue of implementation found also in other areas of diabetes care. Notably, **of the 25 countries that reported the inclusion of structured education in their national guidelines, only 18 indicated that education is offered to all people newly diagnosed**

**with diabetes**. On the other hand, 14 countries reported not having relevant guidelines covering structured education but did report offering education. This demonstrates that having guidelines does not necessarily translate into practice and that practice does not always need to be standardised at certain levels.

The reasons for these gaps vary from one country to another and are detailed in the individual country profiles where possible. Stakeholders in eight different countries identified **inadequate training** for healthcare professionals and subsequent low availability of trained staff to provide education. In six countries where education is supposed to be delivered by the same people who provide other diabetes care, **lack of time and heavy workloads** were singled out. Finally, the **cost of diabetes education** – either as out-of-pocket payments by people with diabetes, as is the case in Moldova and Georgia, or as expenditure by the health system, as in Latvia and Poland – limits the provision and demand for structured education. Further gaps were reported in eight European countries, leading to **uneven availability of diabetes education within countries, and/or different content and quality of educational sessions**.



A small number of countries have been taking steps to address these difficulties. For instance, the diabetes school model that certain European countries have already implemented is being adopted in some countries in Eastern Europe. Initiatives by patient and/or healthcare professional organisations also contribute to bridge gaps in education. In Poland and Turkey, for example, some of these organisations provide additional education on the top of that offered by the healthcare system. In countries that experience in-country inequalities, such as Iceland and Spain, these associations implement educational programmes in areas with low access to diabetes education.

Overall, the key message here is that while efforts are being made by some stakeholders, **more involvement from all parties concerned**, (Ministries of Health, national health agencies, patient and healthcare professional organisations), **is required in order to ensure improved access to high-quality diabetes education for people with diabetes throughout their lifetime.**

### DIABETES SPECIALIST NURSING

All European countries have nurses working with people with diabetes. However, their training, recognition and status and involvement in care vary greatly across the continent. As a result, identifying trends at the European level was particularly challenging.

**In more than half of European countries (29), nurses working in diabetes care acquire their skills and knowledge while employed in a facility offering diabetes care.** In many of these countries, diabetes care is also covered in the initial general nursing curriculum. Countries that reported having strong traditions in diabetes specialist nursing were in the minority: **diabetes nursing is recognised as a specialty in only 19 countries.** Of these, five countries also report mandatory continuous training to retain specialist certification. Interestingly, nine of the countries reported that nurses are also trained while employed in diabetes care. Latvia and Lithuania are the only two countries where diabetes care is covered throughout the career span of a

**Diabetes nursing is a recognised specialty with dedicated initial training and/or certification > 19 COUNTRIES**

**Continuous professional training is mandatory to keep one's certification as a diabetes specialist nurse > FIVE COUNTRIES**

**Continuous professional training is available but the decision belongs to individual nurses > NINE COUNTRIES**

**Diabetes care is covered in the general initial nursing curriculum > 21 COUNTRIES**

**Diabetes care is covered in the general continuous nursing curriculum > 11 COUNTRIES**

**Nurses are trained on-the-job after being employed in a department covering diabetes care > 29 COUNTRIES**



**No specific training on diabetes care is provided for nurses – they have to rely on their own resources, their daily experience or go abroad > NINE COUNTRIES**



nurse, with a recognised specialty and mandatory continuous training in diabetes care, which is also covered in initial and continuous general nursing training.

In about a fifth of countries with no official recognition of diabetes specialist nursing, stakeholders recognised that other nursing specialties or specialist training relevant to diabetes care (such as nutrition, education and treatment) are available to nurses. This suggests that the lack of official recognition of a nursing specialty does not necessarily preclude the availability of such competent professionals in diabetes care.

However, the availability of specialised training for nurses remains an issue in approximately 15% of countries in Europe. In half of these countries, several stakeholders reported that nurses receive specialist diabetes training outside the country due to lack of resources in their own country. A decision to travel abroad for training tends to be the decision of the nurse rather than due to a specific requirement; their newly acquired certification will not be recognised in their own country. In countries where no training

opportunities are available to nurses working with people with diabetes, the literature<sup>45</sup> as well as stakeholders in these few countries confirm that this reflects the limited status and role given to nurses in general. This also impacts on the role and involvement of nurses in diabetes care in other countries.

Regarding the involvement of nurses in overall diabetes management, Europe appears divided: **on the one hand, countries where nurses are envisioned as part of diabetes management for all people with diabetes; and on the other, countries where their involvement is, either in law or in practice, confined to certain population groups or care settings.** Approximately 50% of European countries indicated that nurses are regarded as key stakeholders in the overall management of all people with diabetes. However, even in this group, two countries also mention that the involvement of nurses is limited by other factors, such as insufficient numbers of nurses or their uneven distribution within the country. This suggests that there may be differences between the theoretical role of nurses and that reported by stakeholders.



19



5



9



21



11



29



9

In the other half of Europe – where the involvement of nurses is described as being confined to certain groups or settings – more than three quarters of the countries described the involvement of nurses as limited. As mentioned above, this may be due to their overall status in the health system, as in Belarus and Ukraine;<sup>46,47</sup> the low number of nurses, as in Latvia and Greece; or their role being confined to specific groups or settings, as in Lithuania and Luxembourg. Almost half of the countries that reported limited involvement of nurses in diabetes management also indicated that the role of nurses is limited to inpatient or specialised care settings. A few countries reported nursing care being limited to certain groups: people with type 1 diabetes (three countries), type 2 diabetes (one country), and/or pregnant women with diabetes (three countries).

**“ More than 80% of countries responding on this field stated that nurses play an important role in education for self-management**

The role of nurses is further defined by the components of diabetes management in which they are involved. Overall, nurses working in diabetes are involved principally in efforts to ensure and improve good diabetes self-management. More than 80% of countries responding on this field stated that nurses play an important role in education for self-management. The other main fields of diabetes nursing are problem solving in diabetes management (reported in 22 countries), patient and family behavioural change, and individual care or care management (both reported in 16 countries). **Few countries described a broader field of expertise for nurses.** In eight countries, nurses are reportedly involved in the definition of treatment regimens and in six countries they are able to prescribe certain diabetes medicines and/or medical devices. Psychosocial support is a minor field for nurses working in diabetes, reported in only five countries – less than a sixth of countries that provided information on diabetes nursing.

As mentioned above, status and training does not automatically determine the competence or role of nurses in overall diabetes management. However, both elements appear to be related in most countries. When nurse status is compared with nurse involvement in overall diabetes management, it appears that **in around two thirds of countries where diabetes nursing is a recognised specialty, nurses play or are intended to play a central role in diabetes management for all people with diabetes.** Conversely, nearly all countries that reported providing no specific training in diabetes care for nurses indicated that nurses play a limited role in diabetes management. Interestingly, however, half of the countries where nurses are reported to receive training while employed in diabetes care indicated that nurses play a key role in the management of all people with diabetes. The other half stated that nurses have limited involvement. The five countries that reported the limited involvement of nurses in diabetes management despite recognition of their specialty are also affected by factors mentioned above, such as the overall limited role of nursing in healthcare, insufficient numbers of nurses and the role of nurses being confined to certain groups or settings.

Despite the diversity found in Europe regarding diabetes specialist nursing, our analysis demonstrated the **strong link between the recognition and status of diabetes specialist nurses and the role played by nurses in diabetes management.** A variety of stakeholders across Europe acknowledged the importance of specialised nurses – especially in countries where heavy workloads among medical healthcare professionals are considered to be detrimental to the quality diabetes care – and are looking into approaches to balancing responsibilities between different healthcare providers in order to improve care provision across the health sector and, ultimately, benefit people with diabetes.

Based on this breadth and depth of data collection, analysis and evaluation, this edition of the *Policy Puzzle* provides an up-to-date insight into diabetes healthcare availability and delivery across Europe, and offers an evidence base for regional, national and international policy assessment and revision.



# COUNTRY PROFILES





# ALBANIA

Albania has not developed any national plans for diabetes since 2011. A national diabetes register was planned for 2012 but no further progress has been reported. According to national data, the prevalence of diagnosed diabetes has increased. Guidelines for diabetes have been developed but the extent of their implementation is unknown.

## ■ POLICY

### NATIONAL PLAN

It is unknown whether or not diabetes is high on the political agenda. Albania reportedly has joined an international initiative dedicated to the prevention, control and treatment of diabetes. However, the details of this are unknown. The country is currently not implementing nor is it planning to implement either a national diabetes plan or an NCD plan that includes diabetes. Stakeholders report that in 2014 Albania will begin mass screening of the population aged between 45 and 60 years for glucose and lipid levels among people diagnosed with diabetes.

### PREVENTION

At the time of writing, Albania does not have prevention policies relating to diabetes but is in the process of developing such policies in the near future. Areas to be covered in these policies include obesity and overweight, smoking and harmful use of alcohol. Associations are uncertain whether or not these policies will enjoy strong political support and commitment, and whether sufficient human and technical resources will be made available to meet targets. Attempts to ascertain whether or not these policies will identify and target all key groups at high risk of diabetes were inconclusive. Neither was it possible to clarify whether patient and healthcare professional organisations are officially recognised as key stakeholders; or whether they are directly involved in the implementation of current preventive public health strategies.

## FUTURE DEVELOPMENT

It is hoped that the recently formed government will take note of the growing burden of diabetes and take action to tackle this issue.

“From our organisation’s point of view, the main political barriers are that health is generally underfunded – barely 3% of the budget goes to the Ministry of Health – and that we lack both a national prevention plan and an education programme.”  
*Stakeholder  
from Albania, 2013*

## INFORMATION SOURCE

Information for Albania was collated from one stakeholder and desk research.

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**2.8%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**No data**

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**79,280** (total adult population: 2,359,930)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**2.5-4.0%** (2013)

#### REPORTED TOTAL INCIDENCE

**1.4/1,000** (2013)



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy  
● In progress

## INFORMATION SYSTEM



DIABETES REGISTER

Albania currently does not have a national register for diabetes of any kind. However, some stakeholders have indicated that one is being planned.

● Existing register ● No register  
● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Albania uses 2010 and 2013 diabetes guidelines from international bodies, national health authorities and professional organisations. It was reported that these guidelines cover screening and diagnosis but it was not possible to verify whether they include other topics. Whether or not there is a monitoring protocol to assess the implementation of these guidelines is also unknown.

### DIABETES AND PREGNANCY

No routine data collection was reported on the prevalence or outcomes of either pre-existing diabetes or gestational diabetes among pregnant women. All pregnant women, including those showing symptoms of diabetes, are offered screening for these conditions.

### RENAL CARE

The current status of screening for renal complications could not be verified. However, stakeholders reported that the majority of screening and treatment options are available with the exception of transplantation. Relevant research findings suggest that there is a need for more renal screening programmes.<sup>48</sup>

### STRUCTURED EDUCATION

A number of stakeholders reported that structured education is rarely offered to people with diabetes upon diagnosis, despite this being universally recommended; responsibility for providing initial diabetes education remains with individual doctors during consultations.

### EYE CARE

Eye examinations should be offered at least once a year to people with diabetes but some stakeholders reported that this is not universal. Appropriate healthcare professionals are available and options for screening and treatment exist; but these are mainly present in private clinics and cost is reported to be a major barrier to access.<sup>43</sup>

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is not recognised as a speciality; nurses receive on-the-job training while already engaged in diabetes care. Nurses are principally involved in diabetes self-management education in inpatient settings. Stakeholders report that nurses' involvement in diabetes management remains limited throughout Albania.



# ARMENIA

Since 2011, a national plan that includes diabetes has been implemented. The national diabetes register is not yet complete but diabetes guidelines are in use for several areas, including care and management. The reported national prevalence has increased since previous reports.

## ■ POLICY

### NATIONAL PLAN

It was not known whether diabetes is high on the overall political agenda in Armenia. However, the country has joined an international initiative dedicated to the prevention, control and treatment of diabetes and is currently implementing a national plan for NCDs, which includes diabetes (2012). The adoption of a national diabetes plan has been announced for the near future.

The national NCD plan is relatively comprehensive, covering primary prevention, screening and diagnosis, care provision, self-management support and secondary prevention, as well as information collection systems. No budgetary information on the plan was available. Its principal contributors are the Ministry of Health, healthcare professional organisations and the offices of the Prime Minister and President. Regarding the plan's sources of reference, the Ministry of Health reported having conducted a national situation analysis of the diabetes epidemic and that it looked at European and global strategies and guidelines on diabetes and NCDs. The Ministry indicated that one of the main components of the plan is a monitoring system and reported that it had conducted a baseline study to determine the situation before implementing the plan. However, it does not include a cost-effectiveness analysis.

The plan appears to have strong political support and commitment, although some related associations reported being uncertain whether the allocated budget is sufficient. They also indicated that adequate human and technical resources have not been allocated to the plan, and that it is not being well implemented. Furthermore, the associations question the degree of recognition given to patient and healthcare professional organisations as key stakeholders in the implementation process.

### PREVENTION

Stakeholders in Armenia report the existence of national prevention policies relating to diabetes. However, the budget allocated to these policies is unknown, as is the existence of programmes to monitor or assess the impact or cost-effectiveness of these policies.

While there is strong political support, some stakeholders indicated that insufficient financial, human and technical resources are allocated to these policies. Nevertheless, patient and healthcare professional organisations are recognised as key stakeholders in the implementation of preventive strategies.

### FUTURE DEVELOPMENT

Prevention and control of NCDs, including the promotion of healthy lifestyles, were key priorities of Armenia's 2012-2013 collaborative agreement with WHO.<sup>50</sup> It is unknown what importance NCDs and diabetes will have in the 2014-2015 agreement, which is currently being negotiated.<sup>51</sup>

*“According to WHO, Armenia has the worst outcomes in the former Soviet Union in terms of standardised mortality from diabetes...a rapid policy response is required to curb prevalence and to further improve outcomes.”<sup>49</sup>*

## INFORMATION SOURCE

Information for Armenia was collated from two stakeholders and desk research.



## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**2.6%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**No data**

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**71,230** (total adult population: 2,200,780)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**2.8%** (2012)

#### REPORTED TOTAL INCIDENCE

**0.2/1,000** (2012)



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



DIABETES REGISTER

Stakeholders in Armenia reported that a national register exists but that it is incomplete.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Armenia applies international guidelines for diabetes care as well as those for general practitioners from the Ministry of Health.<sup>52</sup> The guidelines cover primary prevention, screening and diagnosis, healthcare pathways and management for type 1 diabetes and type 2 diabetes, and pre-existing and gestational diabetes in pregnant women, screening for diabetes-related complications, and structured education. There is no protocol in place to monitor the implementation of these guidelines.

### DIABETES AND PREGNANCY

Routinely collected diabetes data include the prevalence of pre-existing diabetes. Screening for diabetes in pregnancy is offered to all pregnant women.

### RENAL CARE

Conflicting information was provided regarding the inclusion or not of screening for renal complications in the national plan. It was confirmed, however, that screening and treatment services are available in the country.

### STRUCTURED EDUCATION

Although education is offered to all people with diabetes upon diagnosis and every few years thereafter, the literature indicates that provision for diabetes self-management education is inadequate.<sup>52</sup>

### EYE CARE

While the majority of people with diabetes are offered an annual eye examination, it was reported that treatment services are not readily available for the majority of people with the disease. In addition, some stakeholders indicated that there is a lack of awareness of the importance of eye care and that in practice only half the people who should undergo annual screening actually do so. Cost was highlighted as a barrier to these services.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is recognised as a speciality in Armenia and nurses require continuous specialist training to maintain their certification. Diabetes nurses are involved in defining treatment regimens and prescribing diabetes medicines and devices for all people with diabetes.



# AUSTRIA

A national diabetes register exists for children, and the country is implementing a national diabetes plan. Reported countrywide prevalence has increased since previous reports and updated guidelines (2012) are now in use. No prevention policies were reported for smoking and harmful use of alcohol.

## ■ POLICY

### NATIONAL PLAN

Diabetes is considered an important issue on the political agenda due to its impact on the health system.<sup>53</sup> Austria has adopted a national declaration on diabetes and joined international initiatives on this issue. Implementation of a national diabetes plan has been underway since 2005.

The current diabetes plan is relatively comprehensive, covering primary prevention, diabetes screening and diagnosis, care provision for people with diabetes, support for self-management and secondary prevention, information systems (collecting relevant epidemiological and cost data), and diabetes research. The Ministry of Health and professional and patient organisations were consulted in the development of the plan.

The involvement of other elements of government and the private sector was also reported but could not be confirmed, and the current annual budget allocation for the plan is unknown. The national plan includes some mechanisms for monitoring implementation.<sup>54</sup>

The national plan was described as adequate by associations working in diabetes but a number of these reported uneven performance across its different objectives and insufficient provision of resources for comprehensive implementation. Stakeholders disagreed as to whether patient and professional organisations are recognised and involved as key stakeholders in implementation.

### PREVENTION

Austria has national and some regional policies and campaigns focusing on diabetes prevention. Stakeholders acknowledged political support for and commitment to prevention and public health, as well as adequate targeting of high-risk groups by current policies. However, some expressed concerns over the allocation of resources and the role given to patient and professional organisations in implementing these policies.

### FUTURE DEVELOPMENT

In 2013, the Ministry of Health adopted further policies relating to care and prevention in order to support the efforts initiated in the national diabetes plan.

According to the 2013 Diabetes Report,<sup>53</sup> a key priority is to improve support services offered to people with diabetes and ensure equal access to services across regions and population groups.

*What is your organisation's opinion of the current plan?*

*"My organisation recognises that the diabetes plan is ambitious in design; but its implementation is insufficient."*

*A response from Austria*

### INFORMATION SOURCE

Information on Austria was collated from two stakeholders and desk research.

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**9.3%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**17.5/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**751,930** (total adult population: 6,606,290)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**8.0-9.0%** (2011)

#### REPORTED TOTAL INCIDENCE

**6.7/1,000** (2006)



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy  
● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

Austria has a national diabetes register for children only; some stakeholders expressed doubts as to whether the register is complete. Some regional or care-specific registers also collect data on diabetes.<sup>53</sup>

● Existing register ● No register  
● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

The guidelines of national and international professional organisations are used. The latest diabetes guidelines (2012) cover screening and diagnosis of diabetes and diabetes complications, healthcare pathways for the different types of diabetes and related complications, and structured patient education. There is currently no monitoring system to assess their implementation.

### DIABETES AND PREGNANCY

Although no specific data relating to gestational diabetes or pre-existing diabetes during pregnancy are routinely collected at the national level, all pregnant women are offered screening for both conditions.

### RENAL CARE

Austria's national plan includes screening for renal complications. The complete range of screening and treatment options are reported as being easily available.

### STRUCTURED EDUCATION

Any person with diabetes is eligible to receive diabetes education on a regular basis, when their treatment regimen changes, or when glycaemic control is not optimal. For people with type 2 diabetes, education is organised in a set number of modules integrated into the disease management programme, *Therapie Aktiv*.<sup>55,56</sup>

### EYE CARE

Eye examinations are offered at least every two years. The information we collected suggests that screening and eye care in case of complications are easily available and affordable to the majority of people with diabetes.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes specialist nursing is a recognised speciality with dedicated initial training and certification; and nurses have the option of enrolling in continuous professional training. Diabetes nurses are involved in care management, patient education for self-management and behavioural change, problem solving in diabetes management, and psychosocial support for all people with diabetes.



# AZERBAIJAN

Since the previous edition of the *Policy Puzzle* in 2011, Azerbaijan has continued with a national diabetes register and a national diabetes plan. Updated guidelines (2013) are in use on several topics and reported national prevalence appears to have decreased since previous reports. Prevention policies were reported on all major risk factors for NCDs, including diabetes.

## ■ POLICY

### NATIONAL PLAN

Diabetes is among the country's health priorities due to the growing burden it represents for the health budget in particular. Azerbaijan has joined an international initiative on diabetes and is implementing a five-year national diabetes plan, initiated in 2011. Azerbaijan has also announced the adoption, in close cooperation with WHO, of a national NCD plan for the near future.

The current diabetes plan is comprehensive, covering, among other areas, primary prevention, diabetes screening and diagnosis, care provision for people with diabetes, support for self-management and secondary prevention, information systems collecting relevant epidemiological and cost data, and research in diabetes. However, for the time being, some of these are covered only through pilot projects. Key ministries and government offices as well as professional and patient organisations were consulted in the development of the plan, which was allocated an annual budget of AZN 35.4 million (EUR 32.7 million). The main sources of information for the plan included data from the previous national plan, current research in diabetes, a national situation analysis, and European and global strategies and guidelines. Information on the monitoring and implementation of the plan was not provided.

According to diabetes stakeholders, the national plan's objectives are adequate and the plan has political support. Professional and patient organisations are recognised as stakeholders and are involved in implementation (with some caveats – see below). However, these groups reported that the financial, human and technical resources allocated are insufficient to meet the plan's objectives and are unevenly distributed between regions. Some also relayed locally held concerns over implementation, which is the responsibility of regional governments.

### PREVENTION

Azerbaijan has national-level prevention policies and campaigns related to diabetes; such policies are reportedly being developed. Information on budgets and monitoring systems was not provided. Stakeholders involved in this field also expressed concerns similar to those relating to the national diabetes plan, citing insufficient and unevenly distributed resources. Some also warned that professional and patient organisations are not recognised as key stakeholders and that the current policies do not adequately target high-risk groups. Appraisals of political commitment to prevention and involvement of stakeholders were inconclusive.

### FUTURE DEVELOPMENT

The Ministry of Health has identified prevention programmes and the collection of epidemiological data as key priorities for the near future. However, with the current national diabetes plan due to end in 2015, other stakeholders wonder how future efforts in this field will be carried out.

*On what does your organisation base its assessment on the current national diabetes plan?*

*"There are AZN 35 million (EUR 33 million) for the national diabetes plan and resources have increased. But improvements haven't increased proportionally, and there are inequalities across the country and between regions."*

*Mominat Omarova,  
Azerbaijan Diabetes Society*

### INFORMATION SOURCE

Information on Azerbaijan was collated from three stakeholders and desk research.

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**2.3%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**No data**

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**236,720** (total adult population: 7,856,960)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**2.1%** (2013)

#### REPORTED TOTAL INCIDENCE

**2.5/1,000** (2013)



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

The national register is designed to include all people diagnosed with diabetes. However, some stakeholders reported that the register may be incomplete.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Azerbaijan uses international guidelines and those from national health authorities and professional organisations. Areas covered by the most recent guidelines (2013) include screening and diagnosis of diabetes and diabetes complications, healthcare pathways for type 1 diabetes and type 2 diabetes and related complications, and structured patient education. There is currently no monitoring protocol in place to assess the implementation of guidelines.

### DIABETES AND PREGNANCY

Although all pregnant women are reportedly offered screening for gestational and pre-existing diabetes in pregnant women, routine data collection includes only data on the prevalence of pre-existing diabetes.

### RENAL CARE

Screening for kidney complications is not covered in the national diabetes plan; testing is reportedly available only in the private sector. While some dialysis (in hospitals and at home) is available in the private sector, only a limited number of people have access to such services free of charge in public clinics. Many of those requiring dialysis remain on waiting lists or pay out of pocket for treatment in the private sector. Transplantation services are not available in Azerbaijan.

### STRUCTURED EDUCATION

Diabetes education is provided for all people with diabetes upon diagnosis via diabetes schools.

However, as this service depends on regional governments and resources, the availability varies, including between levels of care. Some stakeholders report that people – mainly with type 1 diabetes – receive education only during their first hospitalisation: outpatient care services lack resources and appropriately trained professionals.

### EYE CARE

Eye examination is offered at least once a year to people with diabetes as part of their annual check-up. Stakeholders reported adequate levels of awareness, availability and affordability of eye screening and care services in public polyclinics.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is not recognised as a speciality and no specific training is available to nurses involved in diabetes care. Little information was available regarding the role of nurses in diabetes care, but it was reported to be limited.



# BELARUS

Belarus maintains a national diabetes register and is developing a national NCD plan that includes diabetes. Updated guidelines (2013) are in use. Reported figures for prevalence of diabetes have increased since previous reports. Prevention policies include all major risk factors for diabetes.

## ■ POLICY

### NATIONAL PLAN

The status of diabetes on the political agenda could not be assessed. However, Belarus has reportedly adopted a related national declaration and joined an international initiative on diabetes. It has also announced the adoption of a national plan for NCDs, including diabetes, for the near future.

The future NCD plan described by one stakeholder appears to be quite broad: it will cover primary prevention, diabetes screening and diagnosis, care provision for people with diabetes, and support for self-management and secondary prevention. The Ministry of Health and professional and patient organisations are being consulted in the development of this plan. However, the main sources of information for its development could not be identified. The plan's annual budget and mechanisms to monitor implementation are unknown and are a matter of concern for some stakeholders involved in diabetes.

### PREVENTION

Belarus has national and regional prevention policies and campaigns relevant to diabetes. However, information on budgets and monitoring systems could not be provided and the areas reportedly covered varied according to different sources. Associations working in diabetes appeared divided on their assessment of these policies and campaigns: no conclusive information could be

identified regarding political commitment to prevention and the principal target groups of the prevention policies. Nonetheless, while all the associations reported that the different stakeholders are recognised and involved in these policies, they also all shared concerns about the financial, human and technical resources allocated to prevention.

### FUTURE DEVELOPMENT

In 2013, Belarus concluded a five-year campaign on diabetes prevention and education organised around World Diabetes Day.<sup>58</sup> The campaign theme for 2014 is as yet unknown.

*“Even according to official WHO data (which are likely to underestimate the burden of disease), diabetes prevalence in Belarus is high and increasing quickly. This suggests that the Government should concentrate on primary prevention.”<sup>46</sup>*

## INFORMATION SOURCE

Information on Belarus was collated from two stakeholders and desk research.

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**6.3%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**5.6/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**460,290** (total adult population: 6,181,240)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**3.4%** (2013)

#### REPORTED TOTAL INCIDENCE

**No data**



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING<sup>57</sup>



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

Although the national register is designed to include all people with type 1 diabetes and those with type 2 diabetes, some stakeholders reported that it is incomplete.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Belarus uses both international and health authority guidelines from 2006 and 2013. These guidelines cover different aspects of diabetes care, including screening and diagnosis, healthcare pathways for different types of diagnosis, screening and care for diabetes complications, and structured diabetes education. There is currently no monitoring protocol in place to assess regularly the implementation of guidelines.

### DIABETES AND PREGNANCY

Routine data collection includes data on the prevalence of gestational and pre-existing diabetes in pregnant women, and outcomes of gestational diabetes. Pregnant women with risk factors are offered screening for diabetes. The information collected suggests that other women may also be offered screening during pregnancy but this information was inconclusive.

### EYE CARE

Eye examinations are reportedly offered at least once a year to people with diabetes. However, one source suggested that the frequency of screening may vary according to the type of diabetes.<sup>4</sup> Stakeholder appraisals of awareness, availability and affordability of eye screening and care services was inconclusive. Regional inequalities reported in the literature may contribute to a explanation of these differing assessments.<sup>43,46</sup>

### RENAL CARE

Renal screening for people with diabetes may be included in the future NCD plan. All the different screening and treatment options except dialysis at home are reportedly available. However, some accessibility issues have been reported in the literature.<sup>46</sup>

## CASE STUDIES

### STRUCTURED EDUCATION

All people with diabetes are reportedly offered diabetes education upon diagnosis and when their treatment regimen changes or in cases of sub-optimal glycaemic control. However, some stakeholders report that structured diabetes education is offered only rarely, suggesting difficulties in the implementation of this directive.

### DIABETES SPECIALIST NURSING

Nurses involved in diabetes care reportedly receive specific training.<sup>46</sup> Diabetes care is covered in the initial nursing curriculum and nurses receive additional on-site training after being employed in a department providing diabetes care. Stakeholders reported that nurses are mainly involved in individual case management but that their role remains limited in diabetes care – a finding that was confirmed by various sources.<sup>46</sup>



# BELGIUM

Belgium is in the process of developing a national plan for NCDs that includes diabetes. A national diabetes register does not exist, but other information collection systems are in place. Various updated guidelines are in use and prevention policies cover all major risk factors for NCDs.

## ■ POLICY

### NATIONAL PLAN

Diabetes is on the political agenda under the umbrella of chronic disease, which facilitates a global approach to comorbidities between different conditions and avoids duplicating efforts.<sup>59</sup> Belgium has adopted both national and regional declarations and resolutions on diabetes in the last eight years. In November 2013, it announced the adoption in the near future of a national plan for NCDs that includes diabetes.

The future plan will focus on integrated, holistic care for chronic diseases and cover primary prevention, care provision, support for self-management and secondary prevention, and information systems to collect relevant epidemiological and cost data. The Federal Ministry of Health and national health agencies, as well as professional and patient organisations, are being consulted in the development of this plan. Its annual budget is as yet unknown. The strongest sources of information for this plan are experience exchanges with other countries and European and global strategies and guidelines. Monitoring and implementation of the plan is insured through a dedicated monitoring system and evaluation of measurable milestones and targets with associated deadlines, following a list of measurable indicators for each of the plan's objectives. A baseline study was conducted in 2006 but focused only on type 2 diabetes; while a cost-effectiveness analysis of the strategies and protocols included in the plan is ongoing under the auspices of a dedicated federal agency.

As this plan has yet to be adopted and implemented, it was not possible to assess its implementation and components. However, associations active in diabetes expressed concerns regarding political commitment diabetes and their fear that political declarations may not be followed up by actions – or the allocation of adequate resources.

### PREVENTION

Belgium has national, regional and community prevention policies and campaigns relevant to diabetes. However, the content, activities and topics covered vary from one level to another. At the federal level, these policies and campaigns include mechanisms to monitor and measure via pre-defined indicators impact during and after implementation. The budget allocated to prevention is unknown. Some stakeholders expressed disappointment that these campaigns remain as separate initiatives without sufficient financial, human or technical funding. The associations' contradictory visions of political commitment to prevention in Belgium and official recognition of patient and professional organisations may result from differences between regions.

### FUTURE DEVELOPMENT

The main areas of work for diabetes policy in the near future include the uptake of new therapies and technologies for diabetes, as well as improved diabetes care for those outside the convention system – including a care contract between the national health insurance, healthcare providers and certain groups of people with diabetes. However, priorities in health may change following the 2014 elections.

*“The [former] federal Minister of Health made a speech during the conference on chronic diseases in November. She managed not to say the word ‘diabetes’ once!”*  
Belgian Diabetes Association, ABD

### INFORMATION SOURCE

Information on Belgium was collated from three stakeholders and desk research.



## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**6.5%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**15.9/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**603,520** (total adult population: 8,272,690)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**4.3%** (2008)

#### REPORTED TOTAL INCIDENCE

**No data**

## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated



## INFORMATION SYSTEM



### DIABETES REGISTER

Belgium does not have a national register for diabetes. However, under the 'convention system', a number of diabetes centres collect diabetes data for certain groups of people with diabetes, mainly people with type 1 diabetes.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Belgium uses guidelines from international sources, national health authorities and professional organisations. These are regularly updated and cover mainly type 2 diabetes but also deal with screening and care for complications. A monitoring protocol is in place to provide regular assessment of guideline implementation – although this could not be confirmed by all stakeholders.

### DIABETES AND PREGNANCY

Data on gestational diabetes and outcomes in pregnant women with pre-existing or gestational diabetes are routinely collected via various information systems. All pregnant women are offered screening for gestational and pre-existing diabetes; awareness on these issues was reported as being high.

### RENAL CARE

The different stakeholders surveyed could not provide information on renal screening and care. However, the literature suggests that at these services are available in Belgium and are integrated into the care pathways for type 2 diabetes.<sup>59,60,19</sup>

### STRUCTURED EDUCATION

Diabetes education is available only under care conventions or care pathways. Thus, only people with diabetes whose condition matches the criteria listed in these frameworks, and/or some of their relatives, are eligible to receive a set number of hours of diabetes education per year. The health authorities identify diabetes education and support for self-management as priority areas.

### EYE CARE

Eye examinations are offered at least once a year to people with diabetes. Both screening and eye care in cases of complications were reported to be easily available and affordable for the majority of people with diabetes. However, stakeholders were unable to provide information on levels of awareness of the importance of eye care, and information on the actual uptake of eye screening was limited.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes specialist nursing was recently recognized as a speciality, with specific initial training and certification together with the training all nurses receive as part of their initial curriculum. Continuous professional training is mandatory to keep certification. However, training, involvement and roles differ between regions.



# BULGARIA

Since the previous edition of the *Policy Puzzle* in 2011, Bulgaria has initiated the process of developing a national diabetes register and is implementing a national diabetes plan. The reported countrywide prevalence of diabetes has increased since previous estimates, and updated guidelines (2012) are in use for diagnosis and care of diabetes-related complications.

## ■ POLICY

### NATIONAL PLAN

Diabetes is listed as a political priority and is among the top recipients from the national health budget. Bulgaria adopted a national declaration on diabetes in 2008 and has joined international initiatives focusing on diabetes. Implementation of a national plan for NCD prevention began in 2013.<sup>61</sup> Key ministries (health, finance and research) and national health agencies, the presidential and prime minister's office, and professional and patient organisations were consulted in the development of this plan. Details of the budget allocated to the plan were not reported. A national situation analysis of the current epidemic as well as European and global strategies and guidelines constituted the strongest sources of information for the plan. Monitoring and implementation is limited to a list of measurable indicators for each of the plan's objectives.

However, some stakeholders expressed discontent at the significant gaps between these directives and actual changes on the ground, warning that diabetes prevention and care remains underfunded and that policies remain focused on curative care rather than primary and secondary prevention or support for self-management.

### PREVENTION

Bulgaria has national prevention policies and campaigns that are relevant to diabetes, with monitoring and measurement of impact during and after implementation through pre-defined indicators. The budget allocated to these activities could not be determined. However, as mentioned above, associations working in diabetes questioned whether these policies and campaigns will manage to slow the growing burden of diabetes. Some

associations reported that prevention is not supported politically and remains under-resourced, adding that current policies do not adequately target high-risk groups and are not inclusive towards patient and professional organisations.

### FUTURE DEVELOPMENT

Representatives of people with diabetes and healthcare professionals voiced extreme dissatisfaction at the lack of any long-term strategy for diabetes due to changing priorities from one government to the next. Stakeholders emphasised the need for strong data collection, secure funding for prevention and care, and called for action to support diabetes self-management in order to tackle the dramatic growth of the diabetes epidemic and consequent high rates of complications.



*Is diabetes a priority in your country?*

*"In Bulgaria diabetes is a national priority only in word, because of political pressure from abroad. The national health insurance fund allocates funding mainly for hospital treatment, amputations, dialysis and surgeries due to delayed and inadequate treatment, rather than supporting prevention, self-management and education."*

*Bulgarian Diabetes Association*

### INFORMATION SOURCE

Information on Bulgaria was collated from two stakeholders and desk research.

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**7.6%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**9.4/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**378,160** (total adult population: 4,415,290)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**9.3%** (2006)

#### REPORTED TOTAL INCIDENCE

**No data**



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy  
● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

Bulgaria does not have a national diabetes register. A national working group has been established to develop one but local stakeholders reported no further activity since the beginning of 2014.

● Existing register ● No register  
● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Bulgaria is using both international guidelines and guidelines from national professional organisations (2012). These cover primary prevention, screening and diagnosis of diabetes and its complications, and structured diabetes education. There is reportedly no monitoring protocol in place to assess the implementation of guidelines on a regular basis.

### DIABETES AND PREGNANCY

Bulgaria does not routinely collect data on the prevalence and outcomes of gestational and pre-existing diabetes in pregnant women. Although pregnant women with risk factors for diabetes should be offered screening for diabetes, no detailed data were available on the implementation of this recommendation.

### EYE CARE

Eye examinations are rarely offered to people with diabetes until complications have already developed. Eye screening and care services were reported to be available mainly in the major cities. Due to the limited information available to people with diabetes and limited financial coverage by compulsory insurance providers, affordability and awareness issues were reported both by stakeholders and in literature assessing access to eye screening and care.<sup>43</sup>

### RENAL CARE

The status of renal screening and care in Bulgaria is unknown.

## CASE STUDIES

### STRUCTURED EDUCATION

Diabetes education is not covered by compulsory insurance and depends on associations as well as the commitment and workload of individual doctors. Therefore, according to stakeholders, structured diabetes education is rarely offered to people with diabetes.

### DIABETES SPECIALIST NURSING

Diabetes specialist nursing is not recognised as a speciality. Nurses involved in diabetes care receive ad hoc training once employed in a department offering diabetes care. It was reported that their role in diabetes care remains limited.



# CROATIA

Since the publication of the previous edition of the *Policy Puzzle* in 2011, Croatia has continued to implement a national diabetes plan and has a functioning national diabetes register. Updated guidelines (2013) are in use and prevention policies address all major risk factor for diabetes.

## ■ POLICY

### NATIONAL PLAN

Diabetes is considered one of the top priorities on the political agenda in Croatia due to the burden it places on society and the health system. Croatia adopted a national resolution on diabetes in 2011<sup>62</sup> and has signed up to international initiatives on diabetes.

Implementation of a national diabetes plan began in 2007 and the adoption of a forthcoming national plan for NCDs has been announced.

The current diabetes plan is comprehensive, covering primary prevention, diabetes screening and diagnosis, care provision, support for self-management and secondary prevention, information systems to collect relevant epidemiological data, and research in diabetes. Key ministries (health and finance) and national health agencies, professional and patient organisations, and industry representatives were consulted in the development of the plan, which receives an annual budget of HRK 2,000,000 (EUR 262,237). The strongest sources of information for the plan were the national situation analysis carried out prior to the plan and international strategies and guidelines. Monitoring and implementation is ensured via a specific monitoring system together with evaluation of measurable milestones and targets with associated deadlines – according to a list of measurable indicators for each of the plan’s objectives and further to a detailed baseline study. However, a cost-effectiveness analysis of the plan’s strategies was not included.

All stakeholders highlighted the strong budgetary constraint on the national plan – which had an impact on its design. According to associations working in diabetes, this limits the implementation of a comprehensive plan, especially in terms of prevention activities and support for self-management. Some also questioned whether diabetes has adequate political support.

### PREVENTION

Croatia has national and regional policies and campaigns for diabetes prevention with impact monitored and measured during and after implementation via pre-defined indicators. Diabetes prevention has a budget of HRK 1,700,000 (EUR 222,901). While associations acknowledged the inclusiveness of these strategies regarding the different stakeholders of the field, they also expressed concerns about limited financial, human and technical resources. Political commitment to prevention and targeting of high-risk groups by the current strategies could not be assessed with certainty.

### FUTURE DEVELOPMENT

Croatia will finalise the transfer of some diabetes care to the primary healthcare level; but the effects of financial constraints worry associations in terms of the future comprehensiveness of the diabetes care package and the uptake of new technologies.

*How does the Ministry of Health react when you raise financial issues?*  
“We [the associations] understand they [the Ministry of Health] recognise our cause. They are there to listen. They would do more if they had the money.”  
*Nenad Simunko, Croatian Diabetes Association*

### INFORMATION SOURCE

Information on Croatia was collated from three stakeholders and desk research.

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**7.0%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**9.1/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**217,860** (total adult population: 2,890,850)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**6.7%** (2012)

#### REPORTED TOTAL INCIDENCE

**1.1/1,000** (2008)

## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy  
● Not communicated



## INFORMATION SYSTEM



### DIABETES REGISTER

The national register is designed to include all people diagnosed with diabetes but was reported to be incomplete.

● Existing register ● No register  
● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Guidelines from international sources, the Ministry of Health and professional organisations are used in Croatia. These cover a range of topics, including screening and diagnosis of diabetes and diabetes complications, healthcare pathways for the different types of diabetes and related complications, and structured education. However, there is currently no monitoring protocol in place to assess their implementation.

### DIABETES AND PREGNANCY

Routine data collection only covers the prevalence of gestational diabetes. All pregnant women are offered screening for gestational and pre-existing diabetes; awareness on these issues was reported to be high.

### RENAL CARE

Croatia's national plan includes screening for kidney complications. All the different screening and treatment options were reported to be easily available.

### STRUCTURED EDUCATION

Although all people with diabetes – and in specific cases, one of their relatives – are eligible to receive structured education upon diagnosis, associations reported unequal or insufficient access to such education because this is the responsibility of diabetes care teams, who often lack time and, in some cases, sufficient training to carry out this task.

### EYE CARE

Eye examinations are offered at least once a year as an element of the routine annual check-up. Both screening and eye care in case of complications was reported as being easily available and affordable to the majority of people with diabetes. However, some stakeholders highlighted that awareness among people with diabetes of the importance of eye care could be improved.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

While diabetes care is covered in the general initial nursing curriculum, diabetes nursing as a speciality does not exist in Croatia. Nurses are trained on-site after being contracted to a diabetes facility. Those involved in diabetes care are involved in education for self-management, behavioural change and problem solving in diabetes management for all people with diabetes.



# CYPRUS

The national diabetes register reported in the 2011 edition of the *Policy Puzzle* remains in use and the country is in the process of developing a new national plan for diabetes. Updated guidelines (2013, 2014) are in use and prevention policies cover all major risk factors for diabetes.

## ■ POLICY

### NATIONAL PLAN

Diabetes is high among Cyprus' health priorities due to its impact on productivity and the wider economy. Cyprus has joined international initiatives on diabetes and following the country's previous national diabetes plan, Cyprus has announced the adoption of a new plan that will operate under the auspices of the new national health plan starting in 2016.

This diabetes plan will be comprehensive, covering primary prevention, diabetes screening and diagnosis, care provision, support for self-management and secondary prevention, information systems collecting relevant epidemiological and cost data, and diabetes research. Key ministries (health and finance) and national health agencies, the presidential and prime minister's office, professional and patient organisations and industry representatives were all consulted in the development of this plan. The allocated annual budget was not reported. The strongest sources of information for the plan were the results and evaluations of the previous national plan as well as European and global strategies and guidelines on diabetes. Monitoring and implementation of the plan is based on a detailed baseline study and supported by a monitoring system and evaluation of key milestones and targets. Further to European monitoring of Cyprus' finances, a cost-effectiveness analysis and transparency protocols will be implemented in all public policies.

As this plan has yet to be finalised, it was too early for stakeholders to assess its design and implementation. According to the Ministry of Health, close cooperation with all the stakeholders and a holistic approach to diabetes are key elements of the future plan. However, the Ministry also stated that activities in research and data collection will be difficult to fund in the current economic climate.

### PREVENTION

Cyprus has national prevention policies and campaigns for diabetes as part of its NCD prevention effort. However, mechanisms to follow up implementation and budget allocation for these activities are unknown. According to the Ministry of Health, a significant focus is on promoting healthy living and healthful choices for school-aged children.

Appraisals of the implementation of these policies were not available.

### FUTURE DEVELOPMENT

The main priority in the field of diabetes policy is the finalisation and endorsement of the national diabetes plan. Additionally, the Ministry of Health is working on the affordability of diabetes care by extending public coverage to the private sector.

*Which factors motivated your country's choice regarding this new diabetes plan?*

*"We have a good connection with all stakeholders. We want to take a holistic approach that is more organised than before. We also have monitoring systems and mechanisms to assess progress of the plan and the changes that are required – in its implementation or any other aspects."*

*Ministry of Health*

### INFORMATION SOURCE

Information on Cyprus was collated from two stakeholders and desk research.

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**10.2%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**14.4/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**124,710** (total adult population: 995,950)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**5.0-10%** (2008)

#### REPORTED TOTAL INCIDENCE

**No data**



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

Cyprus has a national register but this is incomplete, apparently because the participation of private healthcare providers is voluntary. Additionally, some groups involved in diabetes were reported to be opposed to the collection of patient data.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Cyprus is using both international guidelines and the 2013 and 2014 guidelines from national health authorities. These cover primary prevention, healthcare pathways for different types of diabetes, screening and care for diabetes and diabetes complications, as well as diabetes education. According to the Ministry of Health, a monitoring protocol is in place to assess regularly guideline implementation.

### DIABETES AND PREGNANCY

Cyprus does not routinely collect data on gestational or pre-existing diabetes in pregnancy; this type of data collection faces the same challenges as the diabetes register.

It was reported that all pregnant women in Cyprus are offered screening for diabetes.

### RENAL CARE

A report on the status of renal screening and care in Cyprus was not provided.

### STRUCTURED EDUCATION

According to some stakeholders, all people with diabetes are eligible to receive diabetes education upon diagnosis.

### EYE CARE

Eye examinations are offered at least once a year to people with diabetes, and specialist ophthalmological treatment services were reported to be available to the majority of people. However, information could not be found on awareness of the importance of eye care or the uptake and affordability of screening and treatment services.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

In Cyprus, diabetes specialist nursing is not recognised as a speciality and no specific training is available; nurses are sent abroad for training. Nurses working in diabetes are involved in care for all people with diabetes.



# CZECH REPUBLIC

Progress since the 2011 edition of the *Policy Puzzle* includes the development a national register for children with type 1 diabetes and the ongoing implementation of a national diabetes plan. Reported national prevalence estimates have increased since previous reports and up-to-date guidelines from professional organisations are in use. Prevention policies cover all major risk factors.

## ■ POLICY

### NATIONAL PLAN

Diabetes is among the Czech Republic's health priorities due to its cost to the health system and its contribution to the country's disease burden. The Czech Republic has adopted a national resolution and joined international initiatives on diabetes. In 2012, it revised its national diabetes plan and began implementing the new plan in 2013.

The current diabetes plan is relatively comprehensive, covering primary prevention, screening and diagnosis, care provision, support for self-management and secondary prevention, information systems collecting relevant epidemiological and cost data, and diabetes research. The Ministry of Health, the President's and Prime Minister's offices as well as professional and patient organisations were consulted in the development of the plan. Information on the annual budget allocation was unavailable. The strongest sources of information for the plan were the results and evaluations from the previous plan and the findings of current research in diabetes. Monitoring and implementation of the plan is ensured via a specific monitoring system and evaluation of measurable targets with associated deadlines – according to a list of measurable indicators for each of the plan's objectives, and further to a detailed baseline study and a cost-effectiveness analysis of the strategies and protocols included in the plan.

Although the national plan is considered comprehensive, inclusive and well implemented, stakeholders expressed concerns about human, technical and financial resources as well political support for the plan – especially in the field of prevention.

### PREVENTION

The Czech Republic has national and some regional prevention policies and campaigns across different plans (including diabetes and cardio-vascular disease) that are relevant to diabetes. These policies and campaigns include monitoring and measurement of impact during and after implementation through pre-defined indicators, and receive a budget of CZK 30,000,000 (EUR 1,092,896). As mentioned above, while those policies are inclusive towards different stakeholders, the latter reported insufficient resources allocated, weak political commitment and inadequate targeting of at-risk groups.

### FUTURE DEVELOPMENT

As screening and early treatment are currently considered as being well established, stakeholders reported improving and individualising diabetes treatment as their key priorities in the near future.

*What is your organisation's assessment of the plan?*  
“The main problem is that primary prevention is insufficient. Healthy-lifestyle policies are lacking and our organisation considers the role of physicians and nurses as limited because the strategy has to be implemented at the political level as a decision of the government.”  
*Czech Diabetes Society*

### INFORMATION SOURCE

Information on the Czech Republic was collated from three stakeholders and desk research.



## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**9.2%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**19.3/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**871,800** (total adult population: 8,076,540)

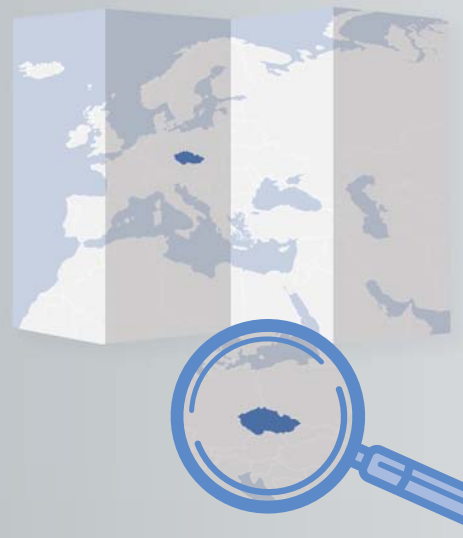
### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**8.5%** (2013)

#### REPORTED TOTAL INCIDENCE

**6.9/1,000** (2012)



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



DIABETES REGISTER

The national register includes only children with type 1 diabetes.<sup>63</sup>

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

The Czech Republic is using international guidelines and recent recommendations (2012, 2013, 2014) from professional organisations. These include screening and diagnosis for diabetes and diabetes complications, healthcare pathways for the different types of diabetes and related complications, and structured patient education. There is currently no monitoring protocol in place to assess regularly the implementation of guidelines.

### DIABETES AND PREGNANCY

Routine data collection includes prevalence and outcomes data on gestational and pre-existing diabetes in pregnant women. Diabetes screening during pregnancy is well established and offered to all pregnant women.

### RENAL CARE

The national plan includes screening for renal complications. All the different screening and treatment options except dialysis at home were reported to be easily available and accessible to people with diabetes.

### STRUCTURED EDUCATION

Diabetes education is offered to all people with diabetes upon diagnosis. Some stakeholders identified this as a priority in diabetes care. However, only local data are available; some stakeholders raise questions as to whether this is evenly implemented throughout the country.

### EYE CARE

Eye examinations are offered at least once per year to people with diabetes. Links between diabetology and ophthalmology are reportedly strong, and stakeholders reported good levels of awareness, uptake and availability of eye screening and care.<sup>43</sup> However, information on the affordability of eye care services was inconclusive.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes specialist nursing is an established speciality in the Czech Republic, with dedicated further training on the top of the training included in the general nursing curriculum. Some continuous specialist training is also available. Diabetes nurses are involved in the definition of treatment regimens, education for self-management and problem solving in diabetes management for all people with diabetes.



# DENMARK

Denmark's national diabetes plan is ongoing and registers are in place for all people diagnosed with diabetes. Reported national prevalence estimates have increased since previous reports and updated guidelines are in use for care and management of diabetes and its complications.

## ■ POLICY

### NATIONAL PLAN

Diabetes, an element of the government's NCD approach, is a top priority on the political agenda. Denmark has signed up to international initiatives on diabetes and has had a national diabetes plan in place since 2003. It has also announced the adoption in the near future of a national plan for NCDs, although it is not known yet how the different plans are to be coordinated or combined.

The current diabetes plan is comprehensive, covering primary prevention, diabetes screening and diagnosis, care provision, support for self-management and secondary prevention, information systems collecting relevant epidemiological data, and diabetes research. However, stakeholders reported that some areas relevant to diabetes care and prevention are covered in separate protocols and policy documents, which were developed after 2003. Key ministries (health and finance) and national health agencies as well as professional and patient organisations were consulted in the development of the national plan. The budget allocated to the plan is unknown. Its strongest sources of information and its monitoring and implementation systems could not be determined. Some stakeholders expressed disappointment that the plan is built on general objectives informed by knowledge and research at its time of adoption, and has no specific annual targets. In the opinion of these stakeholders, the plan's main shortcoming is that it is now outdated and does not match current challenges, needs and practice in diabetes.

### INFORMATION SOURCE

Information on Denmark was collated from two stakeholders and desk research.

### PREVENTION

Besides the prevention objective of the national diabetes plan, Denmark has national and regional policies on diabetes prevention, with associated monitoring and measurement of impact during and after implementation through pre-defined indicators. The budget and activities of the latest prevention programme for healthier lifestyle<sup>65</sup> are as yet not fully defined, so it is too early to discuss implementation of the programme. Some stakeholders reported strong political commitment to prevention, and recognition of patient and professional organisations as key stakeholders in these policies. However, they highlighted inequalities at the local level regarding the resources allocated to local prevention programmes and targeting by these of high-risk populations.

### FUTURE DEVELOPMENT

Discussions have taken place about updating the national diabetes plan, and support shown. However, following recent elections, no final decision has yet been made.

*“The objectives of the national diabetes plan haven't changed since 2003 and there are no yearly target. Some topics that weren't included in the plan have been developed outside it since then. The plan was also designed according to the knowledge and capacities of 2003, so some of it is no longer in line with what is being done or what is doable. The Ministry of Health prefers a chronic-disease approach but it is not known yet how the two plans will be coordinated or combined.”*  
*Danish Diabetes Association*

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**8.6%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**25.1/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**385,080** (total adult population: 4,253,400)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**5.7-6.1%** (2012)

#### REPORTED TOTAL INCIDENCE

**4.7/1,000** (2012)



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



DIABETES REGISTER

The two national registers are designed to include all adults diagnosed with diabetes on the one hand, and children on the other. Since reporting is voluntary, these are incomplete.<sup>64</sup>

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Denmark is using guidelines from national health authorities and professional organisations. The 2008, 2009, 2010 and 2013 guidelines include screening and diagnosis of diabetes and diabetes complications, and healthcare pathways for different types of diabetes and related complications. There is no monitoring protocol in place to assess regularly the implementation of guidelines.

#### DIABETES AND PREGNANCY

Routine data collection includes prevalence data on gestational and pre-existing diabetes in pregnancy.

Pregnant women with high risk or symptoms of diabetes are offered screening.

#### RENAL CARE

Renal screening is not included in the national diabetes plan but is covered in an additional protocol. All the different screening and treatment options were reported to be easily available.

#### STRUCTURED EDUCATION

People with diabetes are offered diabetes education upon diagnosis and later in life if their doctor considers that they may benefit from such provision.

#### EYE CARE

Eye examinations are offered to people with diabetes at least every two years and more often where there are complications. Although regional inequalities remain an issue, stakeholders reported good levels of awareness on eye screening as well as good availability and affordability of eye screening and treatment services.<sup>43</sup>

## CASE STUDIES

#### DIABETES SPECIALIST NURSING

Diabetes care is covered in the initial nursing curriculum. Nurses are also trained on-site after being contracted to a department providing diabetes care. They are involved in support for self-management for all people with diabetes.<sup>55</sup>



# ESTONIA

Estonia has no national plans to address diabetes and there is no national diabetes register. Reported national prevalence estimates have increased significantly since previous reports. Guidelines exist for type 2 and gestational diabetes; and there are prevention policies covering all major risk factors.

## ■ POLICY

### NATIONAL PLAN

Diabetes is one of a number of health issues on the political agenda. Estonia has not joined any international initiatives on diabetes and does not have a national diabetes plan or an NCD plan covering diabetes. However, in 2008 Estonia adopted its National Health Development Plan (2009–2020), which integrates other public health strategies, and is designed to improve health and quality of life.

This plan includes the provision of primary prevention, screening and diagnosis, healthcare provision and support for self-management for the general population for all health conditions. The Ministry of Health highlights specific goals regarding prevention, aimed at improving awareness of risk factors for NCDs, including obesity, and monitoring physical activity and dietary habits. The 2014 budget for this health development plan is EUR 1,015,083 and this is reviewed every year. Whether specific sources on diabetes were used to inform the National Health Development Plan could not be determined, neither could it be confirmed whether the plan includes specific indicators and milestones on diabetes.

As there is no specific plan on diabetes, it was not possible for stakeholders to provide an assessment of diabetes policies and their implementation. According to some, diabetes is not specifically addressed by a policy framework or plan.

### PREVENTION

Estonia has a national prevention programme for diabetes. It was reported that Estonia monitors and measures impact during and after the implementation of prevention programmes using pre-defined indicators. The Ministry of Health explained that the prevention programme is adapted to the situation and key issues within individual regions. It also reported that a new framework on nutrition and prevention of obesity is being developed with input from various stakeholders, including NGOs and other authorities.

However, some associations in the field disagreed. They argued that professional and patient organisations are not recognised as key stakeholders in prevention strategies, neither are they involved in implementation. It was claimed that prevention is not supported politically or provided with sufficient financial, human or technical resources and that high-risk populations are not targeted adequately.

### FUTURE DEVELOPMENT

The Ministry of Health plans to strengthen NCD prevention at the primary healthcare level. Further to the different policies and frameworks under development or recently adopted, it aims to implement other prevention and information activities on NCDs – encompassing nutrition and obesity.

## INFORMATION SOURCE

Information on Estonia was collated from two stakeholders and desk research.

*In which two areas of diabetes policy could Estonia improve?*

*“We need more preventative activities, such as awareness raising, that focus on the early detection of diabetes. Having a diabetes register would also be useful.”*

*Ministry of Health*

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**7.7%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**17.1/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**74,290** (total adult population: 859,250)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**8.7%** (2013)

#### REPORTED TOTAL INCIDENCE

**Inconclusive**



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



DIABETES REGISTER

Estonia does not have a national diabetes register for diabetes. According to the Ministry of Health this is due to financial constraints.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Estonia is using international guidelines and those from healthcare professionals. These include 2008 guidelines for treatment of type 2 diabetes, which cover screening and diagnosis as well as healthcare pathways, and 2009 guidelines for treatment of gestational diabetes. A monitoring protocol was reported to be in place to assess the implementation of these guidelines.

### DIABETES AND PREGNANCY

Routine data collection for diabetes includes prevalence of gestational diabetes. Screening is offered to all pregnant women. The Ministry of Health explained that healthcare institutions are obliged to register the birth of children from mothers with gestational diabetes.

### EYE CARE

Eye examinations are offered at least once per year and ophthalmological treatment services are readily available for the majority of people with retinopathy. However, associations in the field stated that the majority of people with diabetes are not well informed about the importance of eye care, nor do they undergo an annual eye examination. The associations also pointed out that the professionals currently in post do not have the competencies to undertake eye screening, and that cost is a major barrier.

### RENAL CARE

Estonia has renal screening and treatment services that include the assessment of proteinuria, blood pressure measurement, antihypertensive medication, renal dialysis at hospital and at home, and transplantation. These services are believed to be easily available in Estonia.

## CASE STUDIES

### STRUCTURED EDUCATION

Diabetes education is offered universally upon diagnosis and to people with changes in treatment regimens and/or sub-optimal glycaemic control.

### DIABETES SPECIALIST NURSING

Diabetes specialist nursing is not a recognised speciality in Estonia. However, the Ministry of Health indicated that nurses in diabetes may receive specialist training via continuous education sessions. Diabetes care is covered in general training but nurses are also trained while working. They were reported to be involved in care management, education for self-management, individual and family behavioural change and problem solving in diabetes management for all people with diabetes



# FAROE ISLANDS

No national diabetes register is in place but since the previous edition of the *Policy Puzzle* in 2011 the Faroe Islands has begun to implement a national diabetes plan. Prevention policies exist in major risk-factor areas, and guidelines for diabetes are being developed.

## ■ POLICY

### NATIONAL PLAN

Diabetes is a top political priority due to the growing number of Faroese people with diabetes. As the Faroe Islands are an autonomous territory of Denmark; regulatory and policy competences are shared between the Faroese and the Danish governments. However, the Faroese authorities are responsible for a significant share of health and healthcare policies. The Faroe Islands, not covered by the Danish diabetes plan, began implementing its own diabetes plan in 2014.

The current diabetes plan is quite broad, covering primary prevention, screening and diagnosis of diabetes, care provision, support for self-management and secondary prevention, and information systems to collect relevant epidemiological and cost data. The Ministry of Health and national health agencies, and professional and patient organisations were consulted in the development of this plan. The budget allocated was unknown, as were its main sources of information and systems for monitoring and implementation.

Assessing the implementation of this recently initiated plan would be premature. However, some stakeholders reported concerns, and a number of their requests were taken into account in the development of the national plan.

### INFORMATION SOURCE

Information on the Faroe Islands was collated from a single stakeholder and desk research.

### PREVENTION

To curb the spread of diabetes, the Faroe Islands has national prevention policies and campaigns covering the principal risk factors for diabetes. No information was available on the budget allocated to these activities or on the control systems for monitoring and implementation. These activities have been incorporated into the national diabetes plan.

Collected information showed the satisfaction of some associations working in diabetes with political support for prevention, resources allocated and inclusiveness towards other stakeholders; and policies targeting high-risk groups.

### FUTURE DEVELOPMENT

All general practitioners will receive diabetes-specific training at the central hospital.

*“What motivated your government’s decision to establish a diabetes plan?”*  
*“It’s a preventive measure by the Government. That is to say, not only to treat people diagnosed with diabetes but also identify people with pre-diabetes (who are at high risk for developing diabetes). There are about 1,000 undiagnosed people in the Faroe Islands out of a population of about 50,000 people.”*  
*A stakeholder from the Faroe Islands*

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**7.9%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**No data**

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**3,340** (total adult population: 37,440)

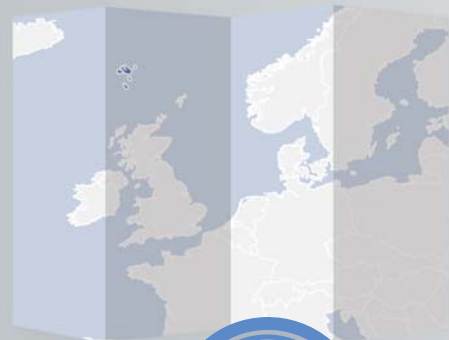
### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**13.1%** (2012)

#### REPORTED TOTAL INCIDENCE

**No data**



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

The Faroe Islands has decided against disease-specific information systems and has preferred a general information system for the whole health sector.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Information on diabetes guidelines could not be collected. However, the development of such guidelines appears to be contemplated in the national diabetes plan.<sup>66</sup>

### DIABETES AND PREGNANCY

Routine data collection includes data on the prevalence of gestational diabetes. Targeted diabetes screening among pregnant women with risk factors is considered sufficient to identify potential cases of diabetes.

### RENAL CARE

Renal screening is included in the national diabetes plan. All the different screening and treatment options are reported to be easily available.

### STRUCTURED EDUCATION

All people with diabetes are eligible to receive diabetes education upon diagnosis. The national plan also provides for follow-up education to be offered within three years of the first sessions.

### EYE CARE

Eye examinations can be offered only every two years because of the low number of eye specialists. However, according to some stakeholders, awareness of the importance of eye care, and the availability and affordability of eye screening and treatment services, are satisfying.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Training on diabetes is available in the Faroe Islands and has been recently extended to nurses working in primary care. They are involved in care in all types of diabetes. However, their role and status could not be determined in this survey.



# FINLAND

Since the release of the 2011 *Policy Puzzle*, there has been no progress in terms of a national diabetes register; diabetes data are collected via studies combining local health-care registers. There is a national plan for NCDs, which includes diabetes. Guidelines exist for the screening, treatment and management of different types of diabetes and associated complications.

## ■ POLICY

### NATIONAL PLAN

Diabetes is a top priority on the political agenda due to the documented burden in Finland. Finland has signed up to international initiatives on diabetes and in 2014 began implementing a new national plan for NCDs that includes diabetes, which will operate until 2017.

Activities related to diabetes in the current plan cover primary prevention, screening and diagnosis, care provision, and support for self-management support and secondary prevention. Professional and patient organisations initiated and currently manage the plan, with support and funding from the state – national health authorities were involved in its development. The annual budget ranges between EUR 2.8 and 3.6 million shared between the stakeholders.<sup>67</sup> The strongest sources of information for the plan were the findings and evaluations of diabetes research as well as international strategies and guidelines. Monitoring and implementation are ensured via yearly surveys; evaluation is carried out by stakeholders and through reporting to the public agency funding the plan. It is also supported by the national health surveys, which are carried out every few years. According to some stakeholders, for the moment the current plan does not face any major difficulties. However, they highlighted the need to make further improvements to target certain groups by incorporating new activities and programmes into the plan.

### PREVENTION

Finland has national policies focusing on diabetes – either as state-enforced laws and policies or as association-led programmes supported by relevant ministries. Information on the budget allocated to these programmes and their monitoring could not be determined.

Stakeholders were divided in their assessment of these policies and programmes, making it difficult to obtain a clear picture of their design and implementation. Nonetheless, while the different associations active in diabetes agreed that they are recognised as key stakeholders in prevention, they were united in condemning the insufficient provision of financial resources allocated to prevention to meet policy objectives.

### FUTURE DEVELOPMENT

After the forthcoming elections, stakeholders will encourage the legal changes necessary to enable the creation of a national diabetes register. Additionally, prevention activities encouraging healthier lifestyles are reportedly high on stakeholders' agenda. In the meantime, the stakeholders involved in the national plan are working with the Ministry of Health to develop a specific programme to improve care for people with type 1 diabetes.

### INFORMATION SOURCE

Information on Finland was collated from three stakeholders and desk research.

*“What motivated Finland's decision to have an NCD plan?  
“The associations developed [this plan] – DEHKO for prevention and care until 2010; and currently, One Life for prevention, health promotion, care and rehabilitation – with the backing of the Ministry of Health. These are joint actions with other NCD associations, because we have so much in common.”  
Sari Koski, Finnish Diabetes Association*



## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**8.9%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**57.6/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**367,460** (total adult population: 3,904,090)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**6.0%** (2007)

#### REPORTED TOTAL INCIDENCE

Type 2: **5.51/1,000** (2007)

Type 1: **0.3/1,000** (2007)



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

Finland does not allow disease-specific registers. Data on diabetes are collected via studies combining local healthcare registers.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Finland uses international diabetes guidelines as well as 2013 guidelines from domestic professional organisations. These cover topics including screening and diagnosis of diabetes and diabetes complication, healthcare pathways for the different types of diabetes and related complications, and structured education. There is currently no monitoring protocol in place to assess guideline implementation regularly.

### DIABETES AND PREGNANCY

Routine data collection appears to include data on the prevalence of gestational diabetes, although this could not be confirmed by all stakeholders. Only pregnant women at high risk for or with a history of diabetes are offered diabetes screening.

### RENAL CARE

The national plan includes activities related to renal screening. All the different screening and treatment options were reported to be easily available.

### STRUCTURED EDUCATION

All people with diabetes are offered diabetes education upon diagnosis and in cases where treatment regimens change or glycaemic control is not optimal. A framework for educational sessions is reportedly being developed. However, some stakeholders report that diabetes education is hampered by the insufficient number of diabetes nurses in the country.

### EYE CARE

Eye examinations are offered at least every two years. Assessments of people's awareness of the importance of eye care, and the availability, uptake, and affordability of eye screening were inconclusive, as different stakeholders make differing analyses of the situation.

While the literature confirms the availability of eye screening and treatment services in Finland, it also highlights gaps in implementation.<sup>43</sup>

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Nurses involved in diabetes care are able to choose to follow specialist training on top of the training received as part of the initial nursing curriculum. They are also trained on-site having been contracted to a department providing diabetes care. Nurses are involved in individual care management, education and support for all people with diabetes. However, according to some stakeholders, twice the current number of nurses will be required to face increasing demand.



# FRANCE

Although no national diabetes register exists, France is implementing a countrywide plan that includes diabetes. Reported national prevalence estimates have increased since the previous edition of the *Policy Puzzle* in 2011. Revised guidelines are now in place for screening, diagnosis, treatment and management for type 2 diabetes and diabetes complications.

## ■ POLICY

### NATIONAL PLAN

Diabetes is a stated top priority on France's political agenda. Following completion of the 2007-2011 plan for quality of life of people with chronic diseases, France is implementing further programmes for NCDs, including diabetes. The SOPHIA programme for diabetes, which began in 2008, is being extended to other NCDs. The programme covers support for self-management and secondary prevention as well as other areas, such as psychological and social support. The Ministry of Health, national health agencies and professional and patient organisations were consulted in the development of this plan, which is implemented under the auspices of the national health insurance system. Information on the programme's annual budget and its principal sources of information could not be collected. The literature reports that monitoring and implementation is ensured via evaluations at key milestones.<sup>44</sup>

Stakeholders reported that while these programmes and plans benefit from strong political support and have adequate objectives, the allocation of financial, human and technical resources is insufficient. Groups working in diabetes were divided on their assessment of implementation as well as inclusiveness towards all stakeholders. Some highlighted the need to improve SOPHIA's reach to people with diabetes facing difficulties; in 2013, only 12.5% of the eligible population was enrolled in the programme.<sup>68</sup>

### INFORMATION SOURCE

Information on France was collated from two stakeholders and desk research.

### PREVENTION

France has national policies and programmes relating to the prevention of diabetes. Also, prevention and health promotion are identified as key priorities of the next national health strategy to be adopted by 2015.<sup>69</sup> Information on the budget allocated to prevention and on monitoring and implementation could not be collected.

While stakeholders recognised political commitment to prevention, their assessment of the allocated resources, targeting of high-risk groups and inclusiveness of all the stakeholders was inconclusive. Some stressed that more progress can be made in all of these fields.

### FUTURE DEVELOPMENT

The law defining the new national health strategy is under discussion and should be adopted by 2015. In the field of care, the SOPHIA programme is being extended to other chronic diseases, and the national health insurance system is about to implement its first telemedicine agreement to improve access to eye screening.

*According to your organisation, which elements of France's policies on diabetes most need to be improved?*

*"The populations with most difficulties or most risk factors are still out of reach of the current programme, hence, the need for local action."*

*French Federation for Diabetes*

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**7.5%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**12.2/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**3,960,860** (total adult population: 48,198,770)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**4.4-6.0%** (2009)<sup>2</sup>

#### REPORTED TOTAL INCIDENCE

**Inconclusive**



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

There is no national diabetes register in France; data on diabetes are collected via general health information systems and regional paediatric registers.<sup>14</sup>

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

France is using diabetes guidelines from the national health authorities (2002, 2013). These cover screening and diagnosis of diabetes and diabetes complications as well as healthcare pathways for type 2 diabetes and diabetes complications. It was unclear whether there is a monitoring protocol to assess the implementation of these guidelines. However, there are financial incentives for doctors to provide patients with diabetes elements of care or services recommended in the guidelines.

### DIABETES AND PREGNANCY

Routine data collection does not include data on gestational or pre-existing diabetes during pregnancy. Some stakeholders reported that although some professional organisations recommend diabetes screening for pregnant women with risk factors or symptoms only, testing is increasingly offered systemically to all pregnant women.

### EYE CARE

Eye examination should be offered at least once a year to people with diabetes. Stakeholders reported good awareness among people with diabetes, affordability of services and availability of treatment services for people with eye complications. However, some stakeholders and the literature<sup>43,68</sup> highlight the insufficient number of ophthalmologists allowed to perform eye screening – thus limiting screening uptake.

### RENAL CARE

The national plan and subsequent programmes do not include renal screening. All the different screening and treatment options surveyed were reported to be easily available.

### STRUCTURED EDUCATION

Although diabetes education is recommended for all people with diabetes upon diagnosis, implementation is limited: diabetes education was reported to be rarely offered to people with diabetes and remains available mainly in hospitals.<sup>70</sup> Therapeutic education was a major objective of the 2007-2011 plan and subsequent programmes.

### DIABETES SPECIALIST NURSING

Diabetes specialist nursing is not recognised as a speciality. Training, besides that provided in the general nursing curriculum, is undertaken on-site while nurses are employed in a department offering diabetes care. For any person with diabetes, the role of nurses involved in diabetes care may cover the prescription of certain medicines or medical devices, individual care management, education for self-management, behavioural change and problem solving in diabetes management.

## CASE STUDIES



# GEORGIA

Progress in Georgia since the 2011 edition of the *Policy Puzzle* includes a working national diabetes register. Although the register does not cover all people with diabetes, this is currently being developed and expanded. Georgia has announced the adoption of plans for diabetes and NCDs, and updated guidelines (2013) are in use for type 2 diabetes. The reported national prevalence appears to have decreased since previous reports.

## ■ POLICY

### NATIONAL PLAN

Diabetes is among Georgia's principal health priorities and the country has signed up to global declarations and an initiative on diabetes and NCDs. It has also announced the future adoption of a national diabetes plan and a national plan for NCDs.

Based on the information collected, the fields to be covered by these plans remain unclear. However, these reportedly include primary prevention, care provision, and support for self-management and secondary prevention. The Ministry of Health, national health agencies and professional and patient organisations are being consulted during the early stages of development of these plans. The annual budget to be allocated to these plans is unknown. The strongest sources of information reportedly include the results and evaluations of previous national plans, experience exchanges with other countries, and global strategies and guidelines. Monitoring and implementation of the plan will be ensured according to a detailed baseline study via evaluations at key milestones or targets.

As these plans have yet to be finalised, stakeholders could not assess the details of their content or implementation. Some reported being invited to take part in the coming discussions and perceived strong political support for such policies.

### PREVENTION

Georgia does not have prevention policies at the moment; according to stakeholders, this work for the most part has been carried out by civil society organisations. However, Georgia is reportedly preparing policies on smoking as well as obesity and overweight (as part of the above-mentioned NCD plan). As these policies are under development, stakeholders could not provide detailed assessments.

### FUTURE DEVELOPMENT

No information was reported on planned adoption dates for the above-mentioned national plans. According to some stakeholders, the priority is to provide further specialist training to healthcare professionals involved in diabetes care. Some initiatives have been initiated locally with support from international organisations.



*The responses we have collected indicate that no prevention initiatives are currently in place. What motivated such a decision?*

*"NGOs are carrying out screening and prevention. The Ministry does nothing to make things move. The thing is that the previous government had no interest in these problems. Information [on prevention policy] did not reflect reality. The situation in political circles is still not stable. We hope that after the forthcoming elections the real work will start."  
Elena Shelestova, Georgian Union of Diabetes and Endocrine Associations*

### INFORMATION SOURCE

Information on Georgia was collated from three stakeholders and desk research.

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**3.0%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**4.6/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**97,450** (total adult population: 2,806,800)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**1.8%** (2012)

#### REPORTED TOTAL INCIDENCE

**3.7/1,000** (2012)



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy  
● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

The national register is designed to include people with diabetes who are on insulin, supporting the procurement and provision of medications by the state. Some regional registers for type 2 diabetes are also being developed.

● Existing register ● No register  
● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Georgia is using international guidelines for diabetes care, as well as 2013 guidelines from professional organisations, specifically for type 2 diabetes care. These guidelines include primary prevention and screening and diagnosis of diabetes, healthcare pathways for type 2 diabetes and screening and care for diabetes complications. There is currently no monitoring protocol in place to assess the implementation of guidelines.

### DIABETES AND PREGNANCY

It is unclear whether data on gestational and pre-existing diabetes in pregnancy are routinely collected. Diabetes screening for pregnant women appears to be implemented unevenly and only offered to pregnant women showing symptoms of diabetes.

### RENAL CARE

Information on provision for renal screening in the future plan was inconclusive, as it was for the current availability of different options for renal screening and care.

Some stakeholders and the literature<sup>71</sup> report inequalities and barriers similar to those in eye care.

### STRUCTURED EDUCATION

Some stakeholders report that all people with diabetes and at least one of their relatives are offered diabetes education upon diagnosis. However, a number of associations and the literature<sup>71</sup> report that such education is available only in a few centres due to financial constraints and insufficient training opportunities for healthcare professionals.

### EYE CARE

Guidelines recommend an eye examination for people with diabetes at least once a year. Although eye screening and care services are available, information from some stakeholders, as well as the literature,<sup>71</sup> suggested strong inequalities in access to such services – mainly due to information gaps among certain people with diabetes and healthcare professionals, as well as cost barriers.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes specialist nursing is not recognised as a speciality in Georgia. Although diabetes seems to be covered to some extent in the general nursing curriculum, no specific training on diabetes care is available. Nursing in diabetes management is limited: those working with people with diabetes are involved mainly in support for self-management.



# GERMANY

Progress in Germany since the 2011 *Policy Puzzle* includes the adoption of national resolutions on management programmes for type 1 diabetes and type 2 diabetes but there is still no national plan on diabetes or national diabetes register, although other variants exist. Reported estimates of countrywide diabetes prevalence appear to have remained stable compared to previous reports.

## ■ POLICY

### NATIONAL PLAN

Diabetes does not appear as a priority on the political agenda at the national level. However, some regional states are more active than others in this field. While Germany does not have national plans for diabetes, it has adopted national declarations introducing disease management programmes for type 1 and type 2 diabetes care, and has joined international initiatives on NCDs, including diabetes.

The disease management programmes are implemented by sickness funds and aim to improve diabetes care according to national guidelines. They also have a financial objective; the financial burden of chronic diseases is shared across health funds via these programmes. Participation in these programmes is voluntary. The annual budget and principal sources of information for these programmes are unknown; there is no formal monitoring of programme implementation or impact. Information reported by healthcare professionals involved in these programmes is held by individual sickness funds.<sup>44</sup>

Associations working in diabetes expressed their disappointment with the gaps left by the current local and national programmes, which include screening and targeted actions among certain high-risk groups. They also highlighted the lack of publicly available data collected by the different programmes and some organisations working in diabetes care.

### INFORMATION SOURCE

Information for Germany was collated from two stakeholders and desk research.

### PREVENTION

Some German regions have implemented prevention policies and campaigns that address diabetes. A national prevention strategy is under review and is to be adopted soon, although the budget allocated to these policies and campaigns could not be determined. Stakeholders involved in diabetes highlighted a lack of political commitment towards prevention, insufficient resources allocated to preventive activities, inadequate targeting of high-risk groups, and insufficient involvement of associations in prevention policies. Some expressed disappointment that, to date, policy-makers have prioritised voluntary actions based on individual responsibility rather than ensuring collective actions binding a response at the societal level.

### FUTURE DEVELOPMENT

Following last year's elections, the national prevention strategy is expected to be adopted during this term. In the meantime, patient and professional organisations have been calling for a special representative for obesity and diabetes to be appointed by National Government.

*“Does your organisation consider diabetes is a priority on the political agenda in Germany?  
“Unfortunately not. They try to do different small things or minor initiatives instead of one good coordinated effort.”  
A respondent from Germany*

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

IDF ATLAS DATA<sup>6</sup>

NATIONAL DIABETES PREVALENCE

**12.0%** of the adult population (2013)

INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**21.9/100,000** (2013)

ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**8,109,480** (total adult population: 57,376,790)

NATIONAL DATA

REPORTED NATIONAL PREVALENCE

**8.0-9.0%** (2013)

REPORTED TOTAL INCIDENCE

**No data**



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



DIABETES REGISTER

There is no national register in Germany but some organisations (such as sickness funds, universities, health centres) have local or topical diabetes registers.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Germany uses both international guidelines and guidelines from domestic professional organisations. The role of national health authorities regarding guidelines is unclear: many competences in healthcare in Germany are delegated to providers and payers. The 2010 and 2013 guidelines include screening and diagnosis of diabetes and diabetes complications and healthcare pathways. There is no monitoring protocol in place to assess regularly the implementation of guidelines.

### DIABETES AND PREGNANCY

Germany does not routinely collect data at the national level on the prevalence and outcomes of gestational and pre-existing diabetes in pregnancy. All pregnant women are offered screening for diabetes.

### RENAL CARE

According to the literature, despite not having a national plan, Germany offers routine renal screening to people with diabetes.<sup>72,44</sup> All the different screening and treatment options surveyed are reportedly available, although certain services may be under-provided.<sup>73</sup>

### STRUCTURED EDUCATION

All people with diabetes are reportedly offered diabetes education upon diagnosis and when their treatment regimen changes or their glycaemic control is sub-optimal. Diabetes education is included in disease management programmes, and some of the stakeholders have identified diabetes education as one of the strongest points in Germany's policy on diabetes.

### EYE CARE

Eye examinations are offered at least once a year to people with diabetes. Although eye screening and treatment services were reported to be affordable and available in most areas, stakeholders and the literature reported insufficient awareness among people with diabetes on the importance of eye care, and low use of services.<sup>43,72</sup> Uneven availability of eye screening services between regions has also been reported in the literature.<sup>43</sup>

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes specialist nursing is a recognised speciality with dedicated initial training and certification as well as voluntary continuous training. Nurses involved in diabetes care also receive in-service training once contracted to a department providing diabetes care. Diabetes nurses are involved in structuring treatment regimens and providing care management and patient education for all people with diabetes.



# GREECE

A national diabetes register for children is being developed and national plans are in place for diabetes and NCDs. Reported estimates for countrywide prevalence of diabetes have increased since previous reports and updated guidelines (2014) are being used for screening, diagnosis, treatment and management of all types of diabetes and associated complications.

## ■ POLICY

### NATIONAL PLAN

Greece reported having implemented a national diabetes plan and a national plan on NCDs that includes diabetes. Nonetheless, there were differing opinions regarding the perception of diabetes in the country. Associations working in diabetes argued that diabetes is not a political priority, despite efforts from individual public agencies; whereas one of these agencies, the National Diabetes Centre, indicated that diabetes is a priority. Greece has adopted a national declaration on diabetes and has joined international initiatives dedicated to the prevention, control and treatment of diabetes.

The current diabetes and NCD plans reportedly cover primary prevention, screening and diagnosis, care provision, self-management support, epidemiology and cost surveillance, as well as diabetes research. It is reported that the Ministry of Health and the Ministry of Development, with responsibility for research and sciences, were involved in consultations for these plans, as were healthcare professional and patient organisations. The National Diabetes Centre reported that the annual budget for these plans fell from EUR 933,300 in 2010 to EUR 500,000 in 2013. Experiences from other countries and the findings of diabetes research constituted the main sources of information to develop the plans. It was also reported that components in the plan include a baseline study, a monitoring system and evaluation of key milestones.

Associations working in diabetes stated that they were not aware of these national plans, which suggests the plans have not been implemented or that associations were not involved in their development.

### PREVENTION

It was reported that Greece has national prevention policies related to diabetes, the impact of which are assessed and monitored during and after implementation. A cost-effectiveness analysis was said to be included to assess interventions. However, a number of stakeholders pointed out that there is no general campaign on risk factors for diabetes. Thus, it could not be clarified whether or not such policies are widely implemented. Furthermore, associations active in diabetes argued that no strong political commitment exists and that financial, human and technical resources allocated to these policies are not sufficient to make an impact on the diabetes epidemic.

### FUTURE DEVELOPMENT

Associations would like to see more efforts made on prevention, and worry that the current situation will not allow progress to be made. On the other hand, the National Diabetes Centre reported focusing future efforts on the provision of diabetes education and healthcare professional training in diabetes management.

*Do you think diabetes is a priority on the political agenda?  
“The National Diabetes Centre is trying to bring attention to diabetes. We are trying but there are things that need solutions politically and economically. From our point of view, diabetes is not really high on the agenda.”  
Nikolaos Kefalas, Hellenic Diabetes Federation*

### INFORMATION SOURCE

Information on Greece was collated from two stakeholders and desk research.



## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**7.0%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**10.4/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**694,660** (total adult population: 8,055,950)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**10.0-12.0%** (2013)

#### REPORTED TOTAL INCIDENCE

**No data**



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

Greece does not have a national register for diabetes. Associations working in diabetes confirmed that a previous attempt to register pregnant women with diabetes failed. A register for children is being devised but is not yet operational.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Greece uses 2013 and 2014 guidelines from EASD and ADA, and uses 2013 guidelines from the Greek Diabetes Association. These guidelines cover primary prevention strategies, screening and diagnosis, healthcare pathways and management for type 1 diabetes, type 2 diabetes and gestational and pre-existing diabetes, diabetes-related complications, and structured education. There is no monitoring protocol in place to assess the implementation of these guidelines.

### DIABETES AND PREGNANCY

It could not be confirmed whether or not routine data collection takes place for pre-existing and gestational diabetes. Screening is reportedly offered to pregnant women at high risk of diabetes, which is becoming more common as increasing numbers of women are becoming aware of the condition. Screening was reported to be routine.

### RENAL CARE

Whether or not screening for renal complications is included in the national diabetes plan could not be verified. Screening and treatment services were reported to be available, including antihypertensive therapies, renal dialysis in hospital, and transplantation. Cost was said to be a barrier for these services and follow-up procedures incoherent, with stakeholders reporting that the loss of medical records due to a lack of computerised files.

### STRUCTURED EDUCATION

Diabetes education is offered universally upon diagnosis, and to relatives of those diagnosed and people with diabetes with suboptimal glycaemic control and whose treatment regimens change. Associations reported no formal plan for education or a dedicated budget. Whether or not education is offered is the decision of the care team. A lack of trained personnel tends to result in low awareness among people with diabetes and variations in the delivery of diabetes education.

### EYE CARE

Eye examinations were said to be offered at least once a year, but some stakeholders reported that this directive is not well implemented. Associations active in diabetes stated that while there are appropriate health professionals to undertake screening, the decision lies with each person with diabetes. There is low awareness of eye screening and eye care. Associations also reported that an adequate care pathway for retinopathy does not exist, and while treatments exist,<sup>43</sup> cost is a barrier.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is not recognised as a speciality. Diabetes care is covered in the general curriculum and nurses often learn while employed in diabetes care. Nurses wishing to receive specific training are obliged to go abroad at their own cost. A training programme is being developed in one university but is not ready for implementation. In theory, nurses in diabetes are involved with all people with diabetes. However, limited involvement was reported, as was a countrywide lack of nurses to undertake diabetes care.



# HUNGARY

Progress since the 2011 edition of the *Policy Puzzle* includes a working national diabetes register and the ongoing development of national plans on diabetes and NCDs. National prevalence estimates appear to have decreased since previous reports; and updated guidelines (2013) are in use for the management of diabetes and associated complications.

## ■ POLICY

### NATIONAL PLAN

Diabetes is among Hungary's principal health priorities due to its contribution to the country's burden of disease. Hungary has adopted a national resolution on diabetes and has joined international initiatives on diabetes. It announced the adoption in the near future of national diabetes and NCD plans.

The forthcoming plans will be comprehensive, covering primary prevention, diabetes screening and diagnosis, care provision for people with diabetes, support for self-management and secondary prevention, information systems collecting relevant epidemiological and cost data, and diabetes research. The Ministry of Health as well as professional and patient organisations are being consulted in the development of these plans. The annual budget for the plans is as yet unknown. The strongest sources of information for the plans are the results and evaluations of the previous national plan as well as exchanges of experiences with other countries.

Monitoring and implementation are ensured via a specific monitoring system and evaluations at key milestones, according to a list of measurable indicators for each of the plan's objectives and further to a detailed baseline study. Although a cost-effectiveness analysis is not included in these plans, the Ministry of Health stressed that affordability, effectiveness and sustainability are key to informing their decisions in the design of the plans. As these have yet to be implemented, assessment was not possible. However, some stakeholders expressed concerns over sustained political support as well as the adequacy of resources for implementation.

### PREVENTION

Hungary has national prevention policies and campaigns related to diabetes, and is developing further policies on healthy lifestyles and lifestyle changes. The budget for

these actions is unknown. Information on monitoring and implementing the policies was inconclusive – some information suggests the inclusion of impact measurement and cost-effectiveness analysis; some does not. The different stakeholders appeared divided when assessing the support, resources, implementation and design of these prevention policies. The Ministry of Health reported that the area of lifestyle modification for people with diabetes and the general population requires further work.

### FUTURE DEVELOPMENT

The main policy priorities in the coming years include the adoption of the national plans for diabetes and other NCDs. The Ministry of Health also highlights the reduction of obesity and the promotion of healthy lifestyle as key fields of work.

**Do you think diabetes is among Hungary's main health priorities? If so, why?**

*"Yes. In Hungary the leading causes of death are cardiovascular diseases and cancers. One of the main factors for cardiovascular morbidity is diabetes. The majority of cases are preventable via healthy lifestyle and nutrition, and diabetes itself is manageable with appropriate treatment. The integrated management of diabetes care should provide a model for NCDs."*  
*Ministry of Health of Hungary*

### INFORMATION SOURCE

Information on Hungary was collated from three stakeholders and desk research.

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**7.6%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**18.2/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**591,050** (total adult population: 6,922,300)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**8.0-8.5%** (2013)

#### REPORTED TOTAL INCIDENCE

**No data**



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy  
● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

The national register is designed to include children with diabetes only – mainly for research purposes. However, some stakeholders questioned whether this register is complete.

● Existing register ● No register  
● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Hungary is using international guidelines as well as 2012 and 2013 guidelines from domestic professional organisations endorsed by national health authorities. These include primary prevention, screening and diagnosis for diabetes and diabetes complications, healthcare pathways for the different types of diabetes, and related complications. It is unclear whether a monitoring protocol is in place to assess regularly the implementation of guidelines.

### DIABETES AND PREGNANCY

Hungary does not routinely collect data on diabetes and pregnancy. However, all pregnant women are offered diabetes screening.

### RENAL CARE

Renal screening may be included in the future national plans for diabetes and NCDs but this could not be confirmed. All the different screening and treatment options surveyed were reported to be easily available.

### STRUCTURED EDUCATION

All people with diabetes are eligible to receive diabetes education every few years.

### EYE CARE

Eye examinations are offered at least once per year to people with diabetes. However, while eye screening and care services are reportedly available, their affordability and people's awareness and use of these services were unclear according to stakeholders and the literature.<sup>43</sup>

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes specialist nursing is a recognised speciality, with initial training and certification. Voluntary continuous professional training by professional organisations is also available. Diabetes nurses work mainly in inpatient and specialised care settings.



# ICELAND

Developments in diabetes since the 2011 edition of the *Policy Puzzle* include a working national register for type 1 diabetes. But there is no national diabetes plan and there are no plans for one in the future. There are prevention policies in all the major risk-factor areas. It is unknown whether previous guidelines have been updated or whether countrywide prevalence has changed.

## ■ POLICY

### NATIONAL PLAN

Iceland does not have a national diabetes plan, nor has it joined any international initiatives on the prevention, treatment and control of diabetes. The issue of diabetes on the political agenda is a delicate one. Some associations working in diabetes point to the negative effects of the financial crisis of 2008 on health policies. Some improvements have occurred recently. Diabetes reportedly is addressed only in the policy framework for healthy lifestyles within the national health plan.

### PREVENTION

Iceland has national prevention policies related to diabetes. These cover obesity and overweight, healthy eating, physical activity and smoking. According to the literature, Iceland also has prevention policies on the harmful use of alcohol.<sup>74</sup> Additionally, a policy framework promoting healthy lifestyle is under development. The budget for these policies is not known. One stakeholder confirmed having been involved in developing these policies. However, new policies have yet to be finalized, so assessing implementation was not possible. One association working in diabetes expressed concerns over the adequacy of resources being allocated to these strategies, and the lack of specific targeting of high-risk populations.

### FUTURE DEVELOPMENT

According to one association active in diabetes, the main area of work for diabetes policy is to develop a full national diabetes register in order to gather good-quality information on care and inequalities.

*On what does your organisation base its assessment of prevention strategies?*  
“We are skeptical because nothing has actually been done. Nothing has been implemented, although the plan was announced earlier this year. Last year we had a new government (with a new Minister of Health, new policies) so maybe things will happen later.”  
*Icelandic Diabetes Association*

## INFORMATION SOURCE

Information on Iceland was collated from one stakeholder and desk research.

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

IDF ATLAS DATA<sup>6</sup>

### NATIONAL DIABETES PREVALENCE

**4.0%** of the adult population (2013)

### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**14.7/100,000** (2013)

### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**13,370** (total adult population: 275,170)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**No data**

#### REPORTED TOTAL INCIDENCE

**No data**



## INFORMATION SYSTEM



### DIABETES REGISTER

A national register for type 1 diabetes is held at the main hospital in the capital, Reykjavik, where most people with type 1 diabetes receive treatment. It is hoped that the register will be extended in the near future.

- Existing register
- No register
- In progress

## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

- Existing policy
- No plan or policy
- Not communicated

## CARE PROVISION

### GUIDELINES IN DIABETES

Detailed guidelines for type 2 diabetes (2009) are available and currently being revised.

### DIABETES AND PREGNANCY

Iceland routinely collects data on the prevalence of gestational diabetes and outcomes of gestational and pre-existing diabetes in pregnant women. The association reported that screening for gestational diabetes has been extended from only those women at high risk to all pregnant women.

### RENAL CARE

Information on renal screening for people with diabetes and treatment options was unavailable. However, guidelines specify frequency of assessment of renal status.

### STRUCTURED EDUCATION

Every new patient at the diabetes clinics receives diabetes education sessions, which are provided mainly in the capital and other major cities. Associations active in diabetes are trying to hold similar sessions in rural areas, but access remains a problem, as does the lack of awareness of these sessions. Attendance of follow-up sessions is the choice of each person with diabetes.

## CASE STUDIES

### EYE CARE

Eye examinations are offered at least every two years to all people with diabetes. Some stakeholders reported that this is the case mainly for people who visit diabetes clinics. It is not known whether people who see a general practitioner are also offered eye screening. Guidelines recommend that eye screening be carried out, but there is lack of follow-up to check whether this actually takes place. Eye services appear to be available to the majority of people with diabetes.

### DIABETES SPECIALIST NURSING

Diabetes nursing is not a formally recognised speciality in Iceland. However, specific nursing services are available for those attending the main outpatient clinic and at several general practitioner clinics. It was reported that nurses are involved in care for all people with diabetes.



# IRELAND

Since the 2011 edition of the *Policy Puzzle*, Ireland's national diabetes working group has initiated a national diabetes care programme; further guidelines for diabetes have been developed to support the activities of this programme. A diabetes register for children is now functioning although incomplete. According to national data, the prevalence of diagnosed diabetes has already surpassed 2015 projections from the Institute of Public Health.

## ■ POLICY

### NATIONAL PLAN

Diabetes was reported to be among the country's main health priorities, but some associations in the field argued that this has not been translated into action. Nevertheless, Ireland has joined international initiatives on diabetes and adopted the national diabetes working group's national diabetes programme, the National Clinical Care programme, in 2013.<sup>75</sup> Stakeholders indicated that to date, the principal results of the national programme are the national foot care and retinal screening programmes, which focus primarily on healthcare provision, support for self-management and prevention of certain complications. The Ministry of Health, national health agencies and patient and healthcare professional organisations were involved in developing the national diabetes programme. Information was collated from the findings of diabetes research and a national situation analysis. The programme has a monitoring system; evaluations are key milestones. The programme's budget is unknown.

One of the associations working in diabetes maintained that there is strong political support for the programme and that patient and professional organisations are regarded as partners in its implementation, although inadequate financial, human and technical resources are made available to achieve targets. This lack of resources on the ground, as well as the lack of executive power of the diabetes working group, is reportedly hampering uniform policy implementation across the country.

### INFORMATION SOURCE

Information for Ireland was collated from two stakeholders and desk research.

### PREVENTION

Ireland has national prevention policies for diabetes and is developing further policies for the near future. The Ministry of Health confirmed that a monitoring protocol is in place to assess the impact of these policies. The budget for prevention is unknown.

Some stakeholders assessed the situation differently, reporting that these prevention policies – and the national obesity programme in particular – largely comprise different local initiatives, with no national oversight or evaluation. The stakeholders maintained that insufficient resources are allocated to diabetes prevention, and called for large-scale, longer-lasting prevention programmes with strong political commitment and better targeting of people at risk – starting with young people. They lamented the lack of recognition and involvement of patient and professional organisations in the implementation of current prevention programmes.

### FUTURE DEVELOPMENT

Local diabetes care programmes in primary care have provided models for care that associations hoped will be adopted as national policy. Some stakeholders also hoped to see improved funding and implementation of current policies.

*What is your organisation's assessment of the current programmes and policies for diabetes?*

*"There are serious implementation issues. Programmes aren't supported by resources on the ground. Policies aren't implemented, or aren't implemented uniformly, across the country."*  
*Diabetes Ireland*

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**6.5%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**16.3/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**309,200** (total adult population: 3,901,130)

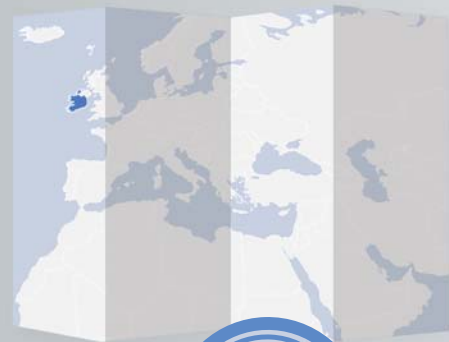
### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**5.6%** (2012)

#### REPORTED TOTAL INCIDENCE

**No data**



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

There is a national diabetes register for children but it was reported to be incomplete.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Ireland uses national and international guidelines including those from domestic healthcare professional organisations; 2008 guidelines for integrated type 2 diabetes care; and a 2011 model for foot care. Guidelines for screening and diagnosis protocols exist, but there is no monitoring to assess implementation.

### DIABETES AND PREGNANCY

It was unclear whether or not data on diabetes and pregnancy are routinely collected. Screening is reportedly offered to pregnant women at high risk of gestational diabetes and those showing symptoms. West Ireland is currently implementing a research programme offering diabetes screening to all pregnant women.

### RENAL CARE

Renal screening and treatment services are available in Ireland, but it was not known whether screening is always offered to all people with diabetes.

### STRUCTURED EDUCATION

Diabetes education is offered only for certain types of diabetes. There is no overall policy; education depends on local initiatives. Associations working in diabetes reported a number of education facilities with waiting lists of up to two years.

### EYE CARE

Eye screening is offered at least every two years under the current programme, but should become yearly once the programme is fully operational. Appropriate professionals and services for eye screening and treatment are available.<sup>43</sup> Currently, only around 40% of known people with diabetes have undergone screening – possibly due to inadequate dissemination of information on the national screening programme.<sup>76</sup>

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is a recognised speciality with specific training. Diabetes is covered in the initial nursing curriculum and nurses also learn while employed in diabetes care. They are involved in care for all people with diabetes. Yet despite recent progress, the number of community diabetes nurses reportedly remains insufficient.



# ISRAEL

According to national data, diabetes prevalence has increased since 2011. Yet the national diabetes plan announced that year remains under discussion, along with further prevention policies and programmes. Updated national guidelines were published in 2013.

## ■ POLICY

### NATIONAL PLAN

The main priority on the government's health agenda is inequalities in health – diabetes is addressed from this angle. Israel has announced the adoption of a national diabetes plan for the near future – although the information collected suggests some activities of this plan may already be implemented since 2013.

The content of this plan seems to be still under discussion but it is likely to cover – among other fields – primary prevention, healthcare provision, information system for epidemiological and cost data as well as support to self-management and secondary prevention. This plan is developed by the National Council on Diabetes, which includes representatives of the Ministry of Health and the professional and patient organisations. The strongest source of information for the development of this plan is the national situation analysis of the diabetes epidemic in the country. As any other government programmes, this plan will include a monitoring system following the list of indicators for the plan's objectives, based on a baseline study. The budget that will be allocated was reported as USD 1 million (EUR 723,956).

Assessing this plan is difficult, as it has not been finalised yet. However, some stakeholders report that for now, patient and professional organisations have been included in the work. They add that the plan's design is adequate to address current challenges in diabetes and that adequate human and technical resources are made available for this plan.

### INFORMATION SOURCE

Information for Israel was collated from two stakeholders and desk research.

### PREVENTION

Israel has some regional and local prevention programmes relevant to diabetes and further action at the national and regional level is under discussion. It is unclear whether some national policies are already in place. As other public programmes, these include monitoring and measurement of impact during and after implementation through pre-defined indicators. A budget of USD 10 million (EUR 7.3 million) was reported for prevention.

According to associations, the current and future prevention programmes benefit from a strong political support and are inclusive towards all stakeholders. If some stakeholders consider high-risk groups are adequately targeted by the current programmes, the Ministry of Health plans on developing further work in this area. Some associations also consider that the resources allocated to prevention are insufficient.

### FUTURE DEVELOPMENT

As the national plan is being discussed, the next steps will be its approval and effective implementation.

*“What motivated your country's choices regarding prevention policies?”*

*“Mainly a combination of organisational considerations and budget constraints. However, prevention receives greater attention in the past few years and the willingness of governmental ministries to implement nation-wide programs is increasing.”*  
*Ministry of Health*



## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**6.7%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**14.9/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**492,920** (total adult population: 6,585,360)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**7.0%** (2012)

#### REPORTED TOTAL INCIDENCE

**No data**



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy  
● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

The national register is designed to include children with diabetes. The Ministry of Health indicated that this register has been extended to include adults but other stakeholders could not confirm this.

● Existing register ● No register  
● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

For diabetes care, Israel is using 2013 guidelines from national health authorities and professional organisations as well as professional guidelines. These guidelines cover primary prevention, diabetes screening and healthcare pathways for diabetes and related complications. There is a monitoring protocol in place to assess guideline implementation.

### DIABETES AND PREGNANCY

Data on the outcomes and prevalence of gestational and pre-existing diabetes in pregnancy are routinely collected. All pregnant women are offered diabetes screening.

### RENAL CARE

Renal screening will be included in the national diabetes plan. All the different screening and treatment options are reported easily available.

### STRUCTURED EDUCATION

Only when a person is diagnosed with certain types of diabetes or when a person's treatment regimen changes or their glycaemic control is not optimal is diabetes education offered.

### EYE CARE

Eye screening is offered at least once a year to people with diabetes. Some stakeholders reported good level of availability and affordability of eye screening and treatment services as well as good awareness among people with diabetes.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is not a recognised specialty. Nurses are trained while employed in diabetes care. Some specialist training may be offered by associations. Nurses' role in diabetes management is reportedly broadening and they are involved in the prescription of treatment, individual care management, education and problem solving in self-management as well as behavioural change for any person with diabetes.



# ITALY

Despite persisting regional variations and constraints on resources, Italy has established national plans for diabetes. Guidelines for diabetes are regularly updated. Diabetes registers remain at the regional level. According to national statistics, the prevalence of diagnosed diabetes has increased.

## ■ POLICY

### NATIONAL PLAN

Diabetes is among the main priorities of the current National Health Plan.<sup>77</sup> Italy has adopted national declarations on diabetes and has joined international diabetes initiatives. The country has been implementing a national diabetes plan since 2012 and a national plan for NCDs covering diabetes was adopted in 2013.

These plans include primary prevention, diabetes screening and diagnosis, care provision, support for self-management and secondary prevention. The Ministry of Health reported that further areas are covered by these plans, including information systems to collect cost and epidemiological data and diabetes research, although other stakeholders did not confirm this. The Ministry of Health, professional and patient organisations and industry representatives were consulted in the development of these plans. Due to the decentralised nature of the Italian health system, the plans are submitted to regional health authorities to be translated into regional actions.<sup>77</sup> The annual budget for the diabetes and NCD plans is unknown. Their strongest sources of information were a national situation analysis and international strategies and guidelines. Monitoring and implementation are insured via a monitoring system and evaluation of key milestones or targets, relative to a detailed baseline study and a list of measurable indicators for each of the plans' objectives.

According to some stakeholders, while these plans are inclusive and benefit from strong political support, they are affected by the current economic crisis, which limits financial, human and technical resources. Other information also suggests that the national diabetes plan may not be implemented to the same level in the different regions.<sup>77</sup>

### PREVENTION

Italy has national prevention policies for diabetes whose impact is monitored and measured during and after implementation via pre-defined indicators. The allocated budget is unknown. According to some stakeholders, while patient and professional associations are recognised and involved in the implementation of prevention policies, these suffer from the same difficulties as the national plans in terms of resources. Some stakeholders report difficulties in targeting high-risk groups.

### FUTURE DEVELOPMENT

The recent reform of the nursing profession has opened the door to the development of speciality training in the future. Additionally, diabetes care will be restructured in coming years.

*What is your organisation's assessment of the current national plans and prevention policies for diabetes?*

*"The current economic situation creates problems in resource allocation for these policies."*

*Medical Diabetology Association*

### INFORMATION SOURCE

Information for Italy was collated from three stakeholders and desk research.

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**8.0%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**12.1/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**4,354,400** (total adult population: 44,323,320)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**5.4%** (2013)

#### REPORTED TOTAL INCIDENCE

**No data**

## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated



## INFORMATION SYSTEM



### DIABETES REGISTER

There is currently no national register for diabetes; regional registers are maintained.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Italy is using 2012 international guidelines as well as 2012, 2013 and 2014 national guidelines from the national health authorities and professional organisations. The guidelines cover all areas relevant to diabetes prevention, care and management. It was unclear whether a monitoring protocol assessing implementation is in place.

### DIABETES AND PREGNANCY

Whether Italy routinely collects data on diabetes and pregnancy could not be determined. All pregnant women are offered screening for gestational diabetes. Additionally, pregnant women with one or more risk factors are screened for pre-existing diabetes.

### RENAL CARE

The national diabetes plan includes renal screening. Although all the different screening and treatment options were described by stakeholders as being easily available, reports in the literature suggest testing for renal complications is insufficient<sup>44</sup> and some stakeholders mentioned long waiting times for renal care.

### STRUCTURED EDUCATION

Structured education is fully integrated to diabetes care and all people with diabetes are offered diabetes education by specifically trained professionals upon diagnosis and on a regular basis thereafter.<sup>60</sup>

### EYE CARE

Although eye examination should be offered to people with diabetes at least every two years, difficulties arise in Italy due to the insufficient number of qualified staff. Otherwise, stakeholders reported good availability of eye screening and treatment facilities, affordability of services and awareness of eye care in diabetes.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes specialist nursing is not a recognised speciality; nurses receive training while employed in diabetes care. They are involved principally in education for self-management, behavioural change and problem solving in diabetes management for all people with diabetes.



# KAZAKHSTAN

The challenges to building a comprehensive diabetes register that were reported in the 2011 edition of *The Policy Puzzle* appear to remain. Kazakhstan has chosen to address the diabetes epidemic through a plan for NCDs including diabetes, rather than through a diabetes plan. Since 2011, national guidelines have been developed according to international standards. According to official data, the prevalence of diagnosed diabetes has increased slightly but this remains below international estimates.

## ■ POLICY

### NATIONAL PLAN

Diabetes is categorised as a 'socially significant and hazardous disease' under Kazakh law.<sup>78</sup> Kazakhstan has adopted a national resolution on diabetes and has joined an international initiative on diabetes. It is implementing a national plan for NCDs including diabetes and has announced a further new plan for the near future.

The current plan is focused mainly on healthcare provision for people with NCDs including diabetes. No information could be collected on the development of diabetes or NCD plans, budgets, monitoring systems or implementation. Stakeholders did not provide any assessment of these plans.

### PREVENTION

Kazakhstan has national and regional prevention policies and campaigns addressing all the principal risk factors for diabetes. The budget and monitoring mechanisms for these policies was unknown.

While some stakeholders reported good political support for prevention, appropriate targeting of high-risk groups and inclusiveness towards the different stakeholders, they also expressed concerns over levels of financial, human and technical resources allocated to prevention.

### FUTURE DEVELOPMENT

The government appears to have acknowledged the growing burden of diabetes in Kazakhstan and has implemented reforms to ensure early diagnosis and access to treatment at the local level. However, challenges remain to achieve these goals, primarily due to resource constraints.<sup>78</sup>

*“The State Healthcare Development Programme 2011–2015 has a strong focus on promoting healthy lifestyles through a comprehensive intersectoral approach.”<sup>78</sup>*

## INFORMATION SOURCE

Information on Kazakhstan was collated from two stakeholders and desk research.

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**4.9%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**No data**

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**754,480** (total adult population: 12,945,060)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**1.6%** (2013)

#### REPORTED TOTAL INCIDENCE

**2.5/1,000** (2014)



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy  
● Not communicated

## INFORMATION SYSTEM



DIABETES REGISTER

The national register is designed to include all people diagnosed with diabetes but is reported to be incomplete.

● Existing register ● No register  
● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Kazakhstan reportedly has national guidelines for diabetes care in accordance with international recommendations.<sup>66,78</sup> However, further details on these guidelines could not be collected.

### DIABETES AND PREGNANCY

Kazakhstan collects routine data on the prevalence and outcomes of gestational and pre-existing diabetes in pregnancy. Diabetes screening is offered to pregnant women with risk factors or symptoms of diabetes.

### RENAL CARE

Information on the availability of renal screening and care for people with diabetes could not be collected.

### STRUCTURED EDUCATION

All people with diabetes and some of their relatives – when the person cannot manage their condition autonomously – are reportedly offered diabetes education upon diagnosis and on a regular basis thereafter.

### EYE CARE

Eye examination is offered at least once per year to people with diabetes. However, some stakeholders reported awareness issues among people with diabetes as well as cost barriers to eye testing and care. Additionally, specialist ophthalmological treatment services are reported to be not readily available to the majority of people with diabetic eye diseases.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes specialist nursing appears not to be a recognised speciality.<sup>78</sup> Stakeholders reported a limited role for nurses in diabetes care. Nurses intervene mainly in inpatient or specialised settings, or in the provision of care to children with diabetes.



# KYRGYZSTAN

As announced in the 2011 edition of *The Policy Puzzle*, Kyrgyzstan has adopted a national plan for NCDs that includes diabetes. The national register for diabetes has been established although it may not be complete yet. According to official data, the prevalence of diagnosed diabetes has increased slightly but remains below international estimates. Guidelines have remained unchanged.

## ■ POLICY

### NATIONAL PLAN

Diabetes is among Kyrgyzstan's main health priorities due to the growing prevalence of the condition, type 2 diabetes in particular. A national law on diabetes was adopted in 2006 and implementation of a national plan for NCDs including diabetes began in 2013.

The Kyrgyz NCD plan focuses on a selection of fields including primary prevention, care provision for people with NCDs including diabetes, and support for self-management and secondary prevention. Key Ministries (health, finance, research) and national health agencies, the Presidential and Prime Minister's office, professional and patient organisations, and industry representatives were consulted in the development of this plan. It has an annual budget of KGS 89,224,100 (EUR 1,187,584).

The strongest sources of information for the plan were experience exchanges with other countries and international strategies and guidelines. Monitoring and implementation are ensured via evaluations at key milestones of measurable targets with associated deadlines.

While stakeholders reported this plan to be inclusive and appropriate, they considered that weak political support and commitment to the plan are hampering implementation and any tangible changes.

No assessment could be provided on the resources allocated to the plan.

### INFORMATION SOURCE

Information on Kyrgyzstan was collated from three stakeholders and desk research.

### PREVENTION

Kyrgyzstan has national prevention policies integrated into its NCD plan and some regional policies and campaigns for the prevention of diabetes. The policies include monitoring mechanisms and measurement of impact during and after implementation via pre-defined indicators. The budget allocated to these policies was unknown.

As is the case with the plan, although stakeholders report being included in the development and implementation of these policies, they stress that the lack of political support is impacting on implementation. No assessment could be provided on the resources allocated to prevention.

### FUTURE DEVELOPMENT

The principal challenge for the coming years is comprehensive implementation of the national plan. However, the lack of trained personnel and the poor quality of care reported by some stakeholders constitute major challenges.

**What is your organisation's assessment of the current plan?**

*"This plan is still not working because of problems with governmental support."  
Diabetes Association of Kyrgyzstan*

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**5.0%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**No data**

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**300,430** (total adult population: 4,523,280)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**1.0%** (2013)

#### REPORTED TOTAL INCIDENCE

**No data**



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

The national register is designed to include all people diagnosed with diabetes. According to some stakeholders, this may not be complete.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Kyrgyzstan uses 2009 and 2010 guidelines from international sources, national health authorities and professional organisations. It was reported that these guidelines cover primary prevention as well as healthcare pathways for type 2 diabetes and diabetes complications. It was unclear whether there is a monitoring protocol in place to assess the implementation of guidelines.

### DIABETES AND PREGNANCY

Kyrgyzstan does not routinely collect data on diabetes and pregnancy. According to the new guidelines, all pregnant women should be offered diabetes screening. However, this recommendation has as yet not been implemented.

### RENAL CARE

The national plan includes renal screening. Although some renal screening and treatment options – excluding home dialysis and transplantation – are reportedly available, some stakeholders cited access issues due to waiting times and cost barriers.

### STRUCTURED EDUCATION

All people with diabetes should be offered diabetes education upon diagnosis. However, some stakeholders and the literature<sup>79</sup> reported limited and uneven implementation of this recommendation, especially outside the capital, due to insufficient training for healthcare professionals, poor levels of primary care and insufficient attendance levels among people with diabetes receiving education.

### EYE CARE

Eye examinations should be offered at least once a year. Stakeholders did not report any particular issues regarding people's awareness of the importance of eye care, its availability and affordability; although it is unclear whether specialist eye treatment services are easily available. Occasional service disturbances due to shortages of medical instruments and supplies are highlighted in some of the literature.<sup>79</sup>

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes specialist nursing does not exist as a speciality. Nurses are trained while employed in diabetes care. They are involved in the definition of treatment regimens, individual care management, and education for self-management. However, due to financial constraints and lack of training, their role in diabetes care remains limited.



# LATVIA

A national diabetes register is in use in Latvia but there is no national plan for diabetes. Guidelines appear to be unchanged since previous reports and national reported prevalence estimates also remain the same. Prevention policies exist for all major risk factors.

## ■ POLICY

### NATIONAL PLAN

Diabetes is not among the country's main health priorities. There is no national resolution on diabetes and Latvia has not joined any international initiatives on the prevention, control and treatment of diabetes. There are no national diabetes or NCD plans, either currently or proposed for the future. Some stakeholders reported that the Ministry of Health (since 1993) repeatedly refuses to develop a national diabetes plan. The national public health strategy for 2011-2017 addresses NCDs but only in terms of prevention. The sections on general healthcare for the population are relevant to diabetes care but do not address diabetes specifically.

Associations working in diabetes reported that NCD prevention does not have strong political support and lacks sufficient financial, human and technical resources. They added that patient and healthcare professional organisations are not regarded as key stakeholders in the implementation of these policies, which also do not target high-risk groups adequately.

### FUTURE DEVELOPMENT

The literature reports developments in clinical guidelines and e-health applications; the need for efficient use of available finances for the health system is highlighted.<sup>81</sup>

## PREVENTION

The national public health strategy covers the prevention of NCDs including diabetes, and addresses all major risk factors for diabetes.<sup>80</sup> It was reported that the strategy was developed through consultations with the Ministry of Health and healthcare professional organisations; evaluations from the previous national plans and international guidelines on NCDs were the principal references. Monitoring of implementation and impact are ensured according to a list of measureable indicators, milestones and targets. In 2013, the budget was LVL 62,000 (EUR 88,218), although it is not known what proportion is specifically for NCDs or the general prevention.

*“Risk factors such as smoking, unbalanced diet, low physical activity, and high body mass index remain highly prevalent in Latvia. Incidence for diabetes has more than doubled from 145/100,000 in 2000 to 388/100,000 in 2010.”<sup>81</sup>*

## INFORMATION SOURCE

Information on Latvia was collated from three stakeholders and desk research.



## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**6.2%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**7.5/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**88,430** (total adult population: 1,306,660)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**3.9%** (2013)

#### REPORTED TOTAL INCIDENCE

**3.4/1,000** (2012)

## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated



## INFORMATION SYSTEM



DIABETES REGISTER

There is a national diabetes register for all people diagnosed with diabetes but it is said to be incomplete.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Latvia uses international guidelines and those from national healthcare professional organisations. These include 2000 and 2007 guidelines on clinical diagnosis and on type 2 diabetes care and screening,<sup>82</sup> as well as 1998 guidelines on care and diagnosis of diabetes in children and adolescents. There is no monitoring mechanism in place to assess the implementation of these guidelines.

### DIABETES AND PREGNANCY

There is no routine data collection for gestational diabetes or pre-existing diabetes in pregnancy. Diabetes screening was reported to be offered mainly to pregnant women at high risk.

### RENAL CARE

Renal screening and treatment options were reported to be available except renal dialysis at home.

### STRUCTURED EDUCATION

Diabetes education is rarely offered to people with diabetes as it is funded by the government only in some university clinical hospitals. Additionally, the number of trained health professionals remains insufficient.

### EYE CARE

It is recommended that eye examinations are carried out annually, but some stakeholders reported issues with the availability and affordability of services. The importance of eye care is well known and treatment services are available, but co-payment and insufficient numbers of trained healthcare professionals constitute barriers.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is a recognised speciality with compulsory continuous training after initial training under the general nursing curriculum. Nurses also receive training while employed in diabetes care. They are involved in prescribing treatment, education, behavioural changes, and problem solving in self-management for those treated in some university clinical hospitals. However, the low number of diabetes nurses makes their involvement in diabetes care limited.



# LITHUANIA

With the previous national diabetes plan completed since the publication of the 2011 *Policy Puzzle*, a new plan is under development, and prevention is officially recognised in Lithuania's national health programme. According to national data, the prevalence of diagnosed diabetes has increased. National guidelines were updated in 2012.

## ■ POLICY

### NATIONAL PLAN

Diabetes was cited by the Ministry of Health as one of the Lithuania's health priorities owing to its high prevalence and strong impact on the country's health system. Lithuania has adopted a national resolution on diabetes, which recognises the importance of preventing and controlling chronic diseases and of reducing diabetes-related mortality and morbidity.

A national diabetes plan for the near future is under development, while the national health programme 2014-2025 identifies the prevention of NCDs as a key priority.<sup>83</sup>

According to the Ministry of Health, the national diabetes plan will take a targeted approach, covering primary prevention, diabetes screening and diagnosis, and healthcare provision. The Ministry of Health, professional and patient organisations and industry representatives are reportedly contributing to the development of the plan, although associations in the field state that not all stakeholders are involved in these discussions. A budget of LTL 12,000,000 (EUR 3,475,440) per year is to be allocated. Many sources of information were reported for this plan, including the results and evaluation of the previous plan, current diabetes research, a national situation analysis of the diabetes epidemic and international strategies and guidelines on diabetes. Monitoring and implementation will be ensured through a list of measurable indicators for each of the plan's objectives.

With the plan yet to be finalised and implemented, it was not possible for stakeholders to assess the plan and its implementation.

### INFORMATION SOURCE

Information for Lithuania was collated from two stakeholders and desk research.

### PREVENTION

Lithuania has national prevention policies related to diabetes. Stakeholders mentioned that further policies are being developed for the near future. It was reported that the impact of prevention policies is monitored and measured during and after implementation through pre-defined indicators. The Ministry of Health reported a budget of LTL 15,000,000 (EUR 4,344,873) for prevention policies.

According to some associations working in diabetes, these prevention policies do not enjoy strong political support and the budgets allocated are not sufficient to meet objectives. The associations also indicate that the policies do not adequately identify and target high-risk populations and that patient and healthcare professional organisations are not recognised as key stakeholders in implementation.

### FUTURE DEVELOPMENT

A major issue for the next few years will be the implementation of the recently adopted 2014-2025 health programme and the national diabetes plan that is under development.

*Which areas of diabetes policy need improvement?*

*"We need to improve early detection and preventive interventions, to strengthen health literacy and patient empowerment; to strengthen and develop coordination, continuity and the interdisciplinarity of healthcare provision."*

*Ministry of Health*

# NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

# EPIDEMIOLOGY

## IDF ATLAS DATA<sup>6</sup>

### NATIONAL DIABETES PREVALENCE

**4.9%** of the adult population (2013)

### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**14.2/100,000** (2013)

### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**118,100** (total adult population: 2,019,870)

## NATIONAL DATA

### REPORTED NATIONAL PREVALENCE

**3.8%** (2013)

### REPORTED TOTAL INCIDENCE

**3.2-3.8/1,000** (2013)



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



DIABETES REGISTER

Lithuania does not have a national diabetes register.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Lithuania uses international guidelines and guidelines from the national health authorities and professional organisations. The 2012 guidelines cover primary prevention, screening for diabetes and diabetes complications, as well as healthcare pathways for different types of diabetes. There is currently no monitoring protocol in place to assess the implementation of guidelines.

### DIABETES AND PREGNANCY

Routine collection of data among pregnant women includes both prevalence and outcomes of pre-existing and gestational diabetes. The Ministry of Health uses these data to evaluate national treatment guidelines. All pregnant women are reportedly screened for diabetes.

### RENAL CARE

Whether or not renal screening will be in the national plan remains unclear. It was firmly reported, however, that most renal screening and treatment options are currently available except transplantation and renal dialysis at home.

### STRUCTURED EDUCATION

Education is reportedly offered when a person's treatment regimen changes or when glycaemic control is not optimal. However, it was also indicated that diabetes education is in fact offered only rarely, and that people have to rely on their own resources to learn about their condition.

### EYE CARE

Eye screening is offered at least once per year to people with diabetes, and a number of stakeholders confirm effective, affordable implementation of screening. However they report awareness issues among people with diabetes regarding the importance of eye care, and challenges relating to the availability of eye screening treatment services and staff.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is a recognised speciality with dedicated training and official licensing by healthcare institutions that provide diabetes nursing care. However, some associations reported that the role of nurses in diabetes management is limited for the most part to specific population groups or specialised care settings.



# LUXEMBOURG

The initiatives for diabetes prevention and care initiated in or before 2011 remain active and further actions were announced by the recently elected government. However, no comprehensive national plan for diabetes or NCDs has been implemented since the publication of the 2011 edition of *The Policy Puzzle*. A register is available for children with diabetes but this has not been extended to adults.

## ■ POLICY

### NATIONAL PLAN

Diabetes is among the country's principal health priorities and was mentioned in the new governmental programme in 2013. Luxembourg has national declarations on diabetes and has joined international initiatives dedicated to the prevention, control and treatment of diabetes. There is no national plan on diabetes or NCDs other than a prevention plan.

According to the Ministry of Health, activities relevant to the diagnosis and care of diabetes are addressed in targeted programmes. The Ministry and associations working in diabetes have announced further collaboration in actions covering the prevention, management and care of chronic diseases such as diabetes and cardio-vascular diseases. Diabetes is also identified by the government as a priority area of research.<sup>84</sup>

According to one association, there is strong political commitment to address diabetes and the role of the association as a key stakeholder in policy and policy implementation is acknowledged.

### PREVENTION

Luxembourg has national prevention policies for all the risk factors of diabetes. The impact of these policies during and after implementation is monitored and measured via pre-defined indicators. Furthermore, diabetes stakeholders confirm that efforts to prevent NCDs like diabetes include a national programme for healthy eating and physical inactivity.

An association working in diabetes indicate that these policies – the national programme in particular – are inclusive towards all relevant stakeholders and that there is strong political commitment behind these policies. However, the association could not provide further assessment of their implementation.

### FUTURE DEVELOPMENT

Improving data collection on chronic diseases such as diabetes is among the government's priorities for the coming term. Additionally, all the stakeholders identified the need for a national model providing a structured approach to diabetes.

### INFORMATION SOURCE

Information on Luxembourg was collated from two stakeholders and desk research.

*What aspects of diabetes policy still need improvement?*

*"There is a lack of coordination of the different actors within the health system. We need to provide more uniform care and support for people with diabetes."*

*Luxembourg Diabetes Association*

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**5.8%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**19/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**32,100** (total adult population: 473,770)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**4.6%** (2010)

#### REPORTED TOTAL INCIDENCE

**2.6/1,000** (2010)

## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated



## INFORMATION SYSTEM



### DIABETES REGISTER

A national register for diabetes exists for children – at the national children's hospital in Luxembourg City. However, it is incomplete as registration is voluntary, and distance and socio-economic barriers may prevent certain families from seeking care in the capital.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

The country uses international guidelines and guidelines from the national health authorities and professional organisations. These guidelines cover healthcare pathways for the different types of diabetes and screening for diabetes-related complications. It was not possible to clarify whether monitoring protocols are in place to assess guideline implementation.

### DIABETES AND PREGNANCY

Luxembourg collects data on both the prevalence and outcomes on pre-existing and gestational diabetes as a means to monitor and improve perinatal health. Individual gynaecologists decide whether or not to screen for diabetes during pregnancy but it was reported that screening is increasingly offered to all pregnant women.

### RENAL CARE

One of the associations reported no barriers to renal care; screening depends on the healthcare professional and individual people with diabetes.

### STRUCTURED EDUCATION

Stakeholders indicated that some diabetes education is available but this is not routinely offered and patient awareness of the importance of education is low.

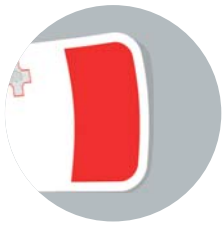
### EYE CARE

Screening for eye disease is offered at least once per year. However, without national recommendations, some stakeholders said this depends on individual healthcare professionals and people with diabetes. No data on eye screening and treatment uptake is publicly available but some stakeholders reported good availability and affordability of both services, and good awareness of this issue among people with diabetes.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is not a recognised speciality. Diabetes is covered in the general nursing curriculum. Further training is provided during employment in diabetes care or outside the country. Nurses in diabetes play a role in education and support for care and self-management. Their role in diabetes management is largely limited to specific population groups or specialised care settings.



# MALTA

The call for action launched in 2011 apparently has been heard: a national diabetes plan is under development and a national register has been created. Local programmes for diabetes have begun work on the development of guidelines for diabetes care.

## ■ POLICY

### NATIONAL PLAN

The Ministry of Health previously initially identified diabetes as one of its health priorities for 2014.<sup>85</sup> The country has adopted a national resolution on diabetes and has announced the adoption of a national diabetes plan for the near future – although some sources reported that the process might be delayed.<sup>85</sup> A national steering committee involving various stakeholders, including the Ministry of Health, national health agencies and patient organisations, has been created. It will be responsible for developing, launching and implementing the national plan. The content of the plan has yet to be determined. Additionally, some programmes, such as the Diabetes Shared Care Programme, have already been implemented within the healthcare system to ensure the continuity and quality of diabetes care, prevent complications and improve data collection throughout the country.<sup>86</sup> It was not known whether implementation will be monitored.

Although the national diabetes plan has yet to be finalised, associations working in diabetes stated that it benefits from strong political support and should be provided with adequate human and technical resources. They added that patient and healthcare professional organisations are recognised as key stakeholders and will be involved in the implementation of the plan.

### INFORMATION SOURCE

Information on Malta was collated from two stakeholders and desk research.

### PREVENTION

Malta has prevention policies at a national level which cover most of the main risk factors, including obesity and overweight, unhealthy eating, physical activity and smoking. It was not known whether there are systems in place to monitor and assess the implementation of these prevention policies. The budget for prevention policies is unknown.

Some associations working in diabetes stated their belief that these policies enjoy strong political backing and are allocated sufficient financial, human and technical resources. They also reported adequate targeting of the main high-risk groups and satisfactory recognition and involvement of the different stakeholders in implementation.

### FUTURE DEVELOPMENT

Further to the Ministry's announcement of a future diabetes plan, the key outstanding policy issue will be finalising and implementing this plan.

“Has your country announced or adopted any diabetes-related policies?”

“The Government announced in the budget in November 2013 that Malta will be initiating a national plan for diabetes.”  
*A response from Malta*

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**10.1%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**21.9/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**36,810** (total adult population: 321,730)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**11.0%** (2014)

#### REPORTED TOTAL INCIDENCE

**No data**

## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated



## INFORMATION SYSTEM



DIABETES REGISTER

There is a national diabetes register but it is incomplete.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Malta uses international guidelines for screening and diagnosis of diabetes and related complications, and healthcare and management for type 1 and type 2 diabetes. Some of the local programmes also include the development of professional guidelines for the management of diabetes.<sup>86</sup>

#### DIABETES AND PREGNANCY

It was not known whether Malta routinely collects data on pre-existing or gestational diabetes in pregnancy. Screening is apparently offered to all pregnant women. Further to this initial assessment, women are categorised according to their risk level, and further testing or treatments are undertaken accordingly.<sup>87</sup>

#### RENAL CARE

It could not be clarified which renal screening and treatment options are available in the country.

#### STRUCTURED EDUCATION

Diabetes education was reported to be offered to all people with diabetes upon diagnosis and has been integrated to the local care programme mentioned above.<sup>86</sup>

## CASE STUDIES

#### EYE CARE

It was not known how often eye screening is offered to people with diabetes or the extent of uptake of these services. Eye screening and treatment services were reported to be readily available and accessible to the majority of the people with diabetes. The affordability of these services was unknown.

#### DIABETES SPECIALIST NURSING

Diabetes nursing was said to be a recognised speciality with optional continuous training made available. It was reported that nurses are involved in care for all people with diabetes. However, their principal responsibilities in diabetes management could not be determined.



# NETHERLANDS

In line with the priorities identified in the 2011 *Policy Puzzle*, the national diabetes plan has been successfully completed and a follow-up plan (Expedition Sustainable Care) through public-private initiatives was adopted recently. The national professional standards and guidelines for diabetes have been updated. National data suggest that diabetes prevalence has increased (although less than expected), and stakeholders warned of the future burden of type 2 diabetes.

## ■ POLICY

### NATIONAL PLAN

Diabetes and other NCDs are among key health priorities due to the growing burden of NCDs and their direct and indirect costs to society. The Netherlands has adopted a national declaration on diabetes and joined European and global diabetes initiatives. In 2013, the Netherlands successfully completed its national diabetes plan.<sup>88</sup> A follow-up plan through public-private initiatives was adopted recently (Expedition Sustainable Care).

This plan focuses on patient centred approach, primary prevention, screening and diagnosis, care provision for people with diabetes, and support for self-management and secondary prevention. The Ministry of Health worked with professional and patient organisations to develop the plan. The annual budget was not reported. The strongest sources of information for the plan were current research in diabetes and a national situation analysis from the previous diabetes plan. Some stakeholders stressed that close collaboration with different stakeholders, monitoring results and developing evidence to address diabetes are a key components of this plan. Information on monitoring was not reported.

Assessment of the new plan by associations working in diabetes was quite positive. They reported strong political support and voiced support for the additional focus on prevention and self-management; and viewed positively the recognition of professional and patient organisations and their inclusion in the process of implementation. They considered that adequate resources have been allocated to the plan although some argue that improvements can be made in the use of these resources. Some associations pointed out that implementation began only recently; the challenge will be to sustain current efforts and coordinate the different initiatives within or alongside the plan to ensure a sustainable and effective long-term response to diabetes.

### INFORMATION SOURCE

Information on the Netherlands was collated from three stakeholders and desk research.

### PREVENTION

The Netherlands has national policies addressing the different risk factors for diabetes, and recently adopted a new plan that promotes healthy living and improving quality of life (2014-2016) – in collaboration between the Ministry of Health and other stakeholders. Some of these policies focus on specific population groups (such as the elderly). Information on monitoring and the budget for these policies was not reported.

According to associations active in diabetes, prevention is supported politically although some suggested that support for care seems stronger than for prevention. Professional and patient organisations are reportedly recognised and involved in the implementation of these policies. Stakeholders considered that high-risk groups are adequately targeted although financial, human and technical resources are insufficient to meet prevention objectives.

### FUTURE DEVELOPMENT

Ensuring effective implementation of recently adopted plans and policies will be the main developments in the near future. Additionally, all stakeholders identified sustainable financing and efficient spending of financial resources for diabetes care and prevention as key long-term issues in the context of the growing burden of type 2 diabetes.

*“According to your organisation, what are the strongest points of your country’s plan and prevention policies?”*

*“In general, our national policies target health rather than disease – hence the priority given to prevention. As for the diabetes plans, the strongest points are collaboration with other stakeholders, support for effective evidence-based diabetes care, and promotion of self-management with individual responsibilities.”*  
*First Association of Diabetes Nurses*



## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**7.5%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**18.6/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**1,101,100** (total adult population: 12,215,720)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**4.9-6.4%** (2011)

#### REPORTED TOTAL INCIDENCE

**2.8 women/1,000** (2011)

**3.5 men/1,000** (2011)

## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated



## INFORMATION SYSTEM



### DIABETES REGISTER

There is no disease-specific national register in the Netherlands. Efforts for a national register for type 1 diabetes have been recently taken. However, local diabetes registers exist based on patient files.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

The Netherlands has national standards and guidelines for diabetes care, developed and updated regularly by professional organisations. These cover all topics relevant to diabetes prevention, care and management. There is a monitoring protocol in place to assess guideline implementation. Some stakeholders explained that insurance companies can monitor the compliance of healthcare professionals through reimbursement and reporting.<sup>55</sup>

### DIABETES AND PREGNANCY

Routine data collection includes outcomes and prevalence data on gestational diabetes and pre-existing diabetes in pregnancy. Pregnant women with risk factors or symptoms of diabetes are tested and treated in specialised care settings rather than primary care.

### RENAL CARE

The national plan includes renal screening for complications. All the different screening and treatment options are reported to be easily available.

### STRUCTURED EDUCATION

Diabetes teams offer education to all people with diabetes on a regular basis, based on national standards and guidelines. However, and some stakeholders reported that it may vary from one team to another.

### EYE CARE

Eye examination is offered to people with diabetes at least once every two years. Stakeholders reported good availability and affordability of eye screening and treatment services as well as good awareness of eye care among people with diabetes.<sup>43</sup>

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is a recognised speciality with compulsory initial and continuous training, additional to the general nursing curriculum, and onsite training while employed in diabetes care. Among other fields, nurses are involved in the definition and prescription of diabetes treatment regimens, individual care management, education and problem solving in self-management, behavioural change, and psychosocial support for all people with diabetes.



# NORWAY

The national diabetes strategy that ended in 2011 continues under the auspices of the current national plan for NCDs. Guidelines from 2009 are under revision and are to be updated by the end of 2014. While reported national diabetes prevalence continues to rise, the existence of a comprehensive diabetes register remains an issue.

## ■ POLICY

### NATIONAL PLAN

Diabetes was reported to be among Norway's key health priorities due to its increasing prevalence. Norway has a national declaration on diabetes and has joined related international initiatives. The country recently initiated implementation of a national strategy for NCDs with a specific emphasis on diabetes as a continuation of the previous national diabetes plan.

The plan reportedly includes primary prevention, screening and diagnosis, healthcare provision, support for self-management and information collection systems. These areas were considered vital to the development of a comprehensive approach against diabetes. The Ministry of Health, national health agencies and patient and healthcare professional organisations were consulted in the development of national programmes. The strongest sources of information for these were results from previous national plans, and international guidelines and strategies on NCDs. The budget allocated to the national strategy on NCDs was reported to be NOK 10,000,000 (EUR 1,219,512). Most of this was allocated to implementation in 2013 with the remainder allocated to the revision of national guidelines.

Some associations working in diabetes considered that the national plan does not have strong political support and is neither well resourced nor well implemented. Nonetheless, they reported that the plan's objectives are adequate and that patient and healthcare professional organisations are well recognised as stakeholders in implementation.

### INFORMATION SOURCE

Information on Norway was collated from two stakeholders and desk research.

### PREVENTION

National prevention policies related to diabetes exist and are designed to promote a cross-sectoral approach to prevention. They include the major risk factors for NCDs and are aligned to the World Health Assembly's goals on NCDs. The policies have mechanisms in place to monitor and measure impact during and after implementation. A budget of NOK 40,000,000 (EUR 4,878,048) was reported for 2014.

Associations active in diabetes described strong political support for prevention policies and good stakeholder involvement. However, they reported issues relating to financial, human and technical resources and to targeting of high-risk population.

### FUTURE DEVELOPMENT

Norway is hoping to implement new electronic guidelines for better decision-making support for primary care providers. The focus on primary prevention will continue.

#### *What are the strongest aspects of diabetes policy in your country?*

*"In the area of prevention policy, there has been the development of low-threshold multidisciplinary intervention centres called Healthy Life Centres for primary prevention in the community. These provide lifestyle interventions on nutrition, physical activity and smoking, for example."*

*Directorate of Health*

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**5.9%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**32.8/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**267,840** (total adult population: 4,170,680)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**4.6%** (2012)

#### REPORTED TOTAL INCIDENCE

**No data**



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

There is a national register for all diabetes cases but it was reported to be incomplete.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Norway uses national guidelines from health authorities and those from healthcare professional organisations. There are specific guidelines for diabetes in children and the national guidelines on prevention, diagnosis and treatment of type 1 and type 2 diabetes are being revised. There is no monitoring protocol in place to assess the implementation of guidelines.

### DIABETES AND PREGNANCY

Norway does not collect data on gestational diabetes or pre-existing diabetes in pregnant women. However, a number of regional and cohort studies provide some estimates for these data. Screening is offered to all pregnant women.

### RENAL CARE

Renal screening is included within the national plan, although it was not known which screening or treatment services are available.

### STRUCTURED EDUCATION

Education is offered to people with certain types of diabetes upon diagnosis, and to relatives of those who are unable to self-manage their condition.

### EYE CARE

It was not known how often eye examinations are offered to people with diabetes as there is no screening programme.<sup>43</sup>

Treatment services are available and associations active in diabetes reported good awareness and appropriate health professionals working in the community. Cost is not a barrier to either screening or treatment.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is recognised as a speciality in Norway. Diabetes nurses are involved in care management and education for people with type 2 diabetes and are regarded as key coordinators in all aspects of a person's condition.



# POLAND

Poland has chosen to address diabetes under a national plan for all NCDs, which will end in 2015 – another is expected to follow. New national registers for certain populations with diabetes have been established since 2011. While national data already show an increase in diabetes prevalence, some stakeholders reported even higher numbers. The 2011 guidelines were updated recently.

## ■ POLICY

### NATIONAL PLAN

There were differences in opinion regarding whether or not diabetes is a national health priority: associations working in diabetes reported low official interest in the problem; whereas health authorities indicated that since 2009 obesity and diabetes prevention are recognised health priorities for the Ministry of Health. Poland is reported to have joined international initiatives for the prevention, control or treatment of diabetes. The country is implementing a national plan on NCDs including diabetes. This will end in 2015 and some stakeholders reported that a new plan has been announced for the near future.

The Ministry of Health stated that the current plan covers primary and secondary prevention, one of the specific goals of the National Health Plan 2007-2015. This plan was reportedly developed in consultations between the Ministry of Health, the Ministry of Science and Research, national health agencies and the office of the Prime Minister and President. The budget was unknown. The strongest sources for information for this plan included results and evaluations from previous national plans and international strategies and guidelines. It was reported also that the plan contains a list of measurable indicators for each objective mentioned. Associations active in diabetes were unable to assess the plan's design and implementation.

### INFORMATION SOURCE

Information on Poland was collated from two stakeholders and desk research.

### PREVENTION

National and regional prevention policies related to diabetes were reported as being in place in Poland, with protocols to monitor and measure impact during and after implementation via pre-defined indicators. The Ministry of Health reported relying on primary healthcare services in prevention, and indicated that implementation is delegated to local governments and NGOs. While associations working in diabetes agreed that patient and healthcare professional organisations were regarded as key stakeholders in implementation, they also argued that the budget is insufficient to meet targets, and that the plan has been allocated insufficient human and technical resources.

### FUTURE DEVELOPMENT

The main priorities in diabetes policies will be the prevention and reduction of key risk factors. Stakeholders hope to see improvements in diabetes education and reimbursement practices, and in the detection of diabetes.

*In which areas of diabetes does Poland need to improve?*

*"The main problem of diabetes care in here is very low detection of diabetes and insufficient numbers of specialised medical units [small teams of doctors] involved in treating diabetes and its complications."  
Ministry of Health*

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**6.5%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**17.3/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**2,133,280** (total adult population: 26,940,780)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**6.5%** (2013)

#### REPORTED TOTAL INCIDENCE

**2.5/1,000** (2013)

## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated



## INFORMATION SYSTEM



### DIABETES REGISTER

Poland has a diabetes register for children and for pre-existing and gestational diabetes in pregnancy; but it could not be clarified whether or not these are complete.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Poland uses guidelines from the Ministry of Health and healthcare professional organisations. The country reported using 2014 guidelines covering screening and diagnosis of diabetes and related complications and healthcare pathways for type 1 and type 2 diabetes. There is currently no monitoring protocol in place to assess the implementation of guidelines.

### DIABETES AND PREGNANCY

Poland routinely collects data on the prevalence and outcomes of gestational diabetes and pre-existing diabetes during pregnancy. Stakeholders also stated that all pregnant women are screened for diabetes.

### RENAL CARE

It is unknown whether screening for renal complications is included in the national plan. Screening and treatment service are easily available, nonetheless, and include dialysis in hospitals and at home, as well as transplantation.

### STRUCTURED EDUCATION

Diabetes education is offered to all people with diabetes, and in some cases to their relatives, upon diagnosis or if glycaemic control is inadequate. Some associations rated the level of education covered by health authorities as minimal due to financial constraints – further education being provided by patient organisations.

### EYE CARE

People with diabetes are offered eye examinations at least once per year. Associations working in diabetes stated that most people with diabetes are aware of the importance of eye care and attend screening. Adequate healthcare professionals and services are available in the community to undertake eye screening and treatment, and cost is not a barrier to either.<sup>43</sup>

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is a recognised speciality with specific initial training and optional continuous training, particularly on self-management education. Improved training in diabetes care and management is under development.<sup>89</sup> Some associations reported that the role of nurses in diabetes management is limited mainly to specific population groups and specialised care settings.



# PORTUGAL

Since the previous *Policy Puzzle* in 2011, Portugal's national diabetes plan has been renewed and a national diabetes register for children finalised. Multiple updated guidelines are in use covering various areas. National prevalence estimates have increased since previous reports.

## ■ POLICY

### NATIONAL PLAN

Diabetes is among Portugal's main health priorities due to the high disease burden and associated costs. Portugal has a national declaration on diabetes and has joined an international initiative on diabetes. Implementation of a national diabetes plan is underway.<sup>90</sup>

This plan covers primary prevention, screening and diagnosis, care provision, support for self-management, information systems and research in diabetes. It was developed through consultations between the Ministry of Health, national health agencies, patient and healthcare professional organisations, and representatives of relevant industry. The current plan was based on evaluations from the previous national diabetes plan, as well as exchanges with other countries and international guidelines on diabetes. The plan includes measurable indicators and milestones and their evaluation. The national budget allocated the plan is EUR 200,000 per year – mainly for coordination, as implementation and its associated cost is a regional competence. Diabetes research benefits from additional specific funding.

According to associations active in diabetes, the plan's objectives are adequate and it enjoys political support. Patient and healthcare professional organisations are involved in implementation at the national level. Yet, as implementation and the allocation of resources depend largely on regional authorities, which are not directly accountable to the director of the plan, stakeholders reported uneven and at times insufficient resources and implementation.

### INFORMATION SOURCE

Information on Portugal was collated from three stakeholders and desk research.

### PREVENTION

Portugal's national and regional prevention policies are incorporated into various targeted plans. Implementation is regional, and coordination between plans is specific to each regional government. National health authorities report a budget of EUR 1,000,000 for all prevention activities. They are discussing their involvement in a further association-led diabetes prevention programme scheduled to begin in June 2014.

According to stakeholders, regionalisation has led to uneven allocation of resources, political support and stakeholder involvement in prevention policies, as well as disproportionate targeting of high-risk groups.

### FUTURE DEVELOPMENT

The authorities and some of the associations identified prevention as a key priority for the future. Local capacities to implement national policies were also considered an area for improvement. A reform of primary care has been initiated to improve the coordination of care at local levels.

*“On what does your organisation base its assessment of the current plan?”*

*“The power to implement the plan belongs to each of the five health regions. They have to adapt the goals to their region, develop activities for the plan, and all this using their own resources.”*

*Portuguese Diabetes Association*

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**13.0%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**13.2/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**1,232,570** (total adult population: 7,801,540)

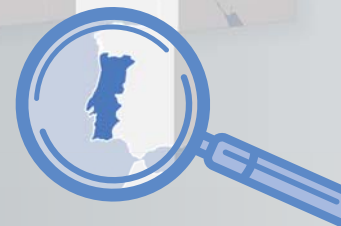
### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**12.9%** (2012)

#### REPORTED TOTAL INCIDENCE

**53.51/1,000** (2012)



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

There is a national diabetes register for children. Data on adults are collected via the National Health Service information system and, thus, not all are registered.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

National and international guidelines are used, as well as those from healthcare professional organisations (updated between 2011 and 2013). These cover all areas of diabetes prevention, care and management. It was unknown whether a monitoring protocol is in place to assess implementation.

#### DIABETES AND PREGNANCY

There is routine data collection on the prevalence and outcomes of gestational diabetes and pre-existing diabetes in pregnancy. Diabetes screening is routinely offered to all pregnant women.

#### RENAL CARE

Renal screening is included in the national diabetes plan and all screening and treatment options are available in Portugal, with no problems reported in the chain of care.

#### STRUCTURED EDUCATION

Diabetes education is offered to people with diabetes and some of their relatives unevenly across the country. It is also offered when treatment regimens change or glycaemic control is suboptimal.

#### EYE CARE

National recommendations stipulate eye screening to be carried out every year; people with diabetes are reportedly aware of the importance of eye care. Cost was not reported as being a barrier. Yet the frequency and uptake of eye screening and the availability of treatment services vary according to regional programmes and allocated resources.<sup>43</sup>

## CASE STUDIES

#### DIABETES SPECIALIST NURSING

Although there is no diabetes nurse speciality, nurses working in diabetes are regarded as specialists and host workshops on care, prevention and self-management support for all people with diabetes. Nurses learn while practising or via a postgraduate course in diabetes, and are considered by health authorities as well trained.



# REPUBLIC OF MOLDOVA

Since the previous *Policy Puzzle* was published in 2011, Moldova has continued implementing its national diabetes plan and has introduced a plan for NCDs. National protocols and guidelines for diabetes care have been updated. However, no national diabetes register has been created or announced.

## ■ POLICY

### NATIONAL PLAN

Diabetes appears to be prominent on the political agenda: Moldova was reported to have a national resolution on diabetes and is currently implementing a national plan for diabetes (2011-2015) and another for NCDs (2012-2020), which includes diabetes.<sup>91</sup> These plans include primary prevention, screening and diagnosis, and care provision. The diabetes plan was developed via consultations between the Ministry of Health and healthcare professional organisations with information from diabetes research, experience exchanges with other countries, and international guidelines on diabetes. Both plans reportedly include evaluations at key milestones to monitor implementation. The budget for the diabetes plan was reported to be MDL 35 million (EUR 1.8 million).

An assessment of the national plans by associations active in diabetes could not be obtained.

### PREVENTION

Moldova has national prevention policies on smoking, harmful use of alcohol and healthy eating.<sup>91</sup> It was reported that Moldova assesses the cost-effectiveness of these policies and related interventions after implementation. The budget for these policies was unknown.

An assessment of the national plans by associations working in diabetes could not be obtained.

### FUTURE DEVELOPMENT

As well as increased involvement of nurses, literature highlights the need for a national diabetes register and integrated primary and secondary care – with consequent improved communication between levels of healthcare.<sup>92</sup>

*“Moldova has an intermediary position in preventing diabetes and in mortality outcomes. Nevertheless, diabetes prevalence in Moldova has almost doubled over the last decade, presenting a worrying trend.”<sup>92</sup>*

## INFORMATION SOURCE

Information on Moldova was collated from one stakeholder and desk research.



## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**2.3%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**No data**

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**72,430** (total adult population: 2,230,260)

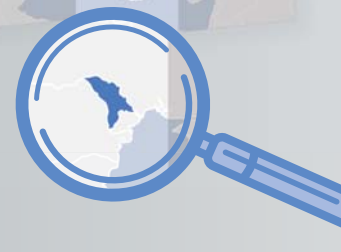
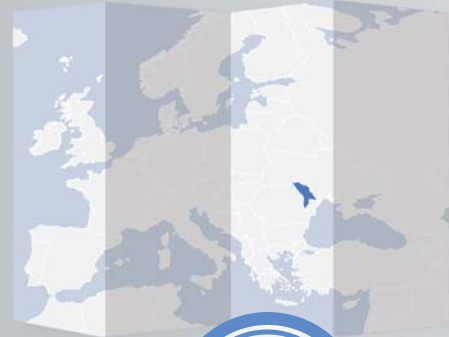
### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**No data**

#### REPORTED TOTAL INCIDENCE

**35.2/1,000** (2013)



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy  
● Not communicated

## INFORMATION SYSTEM



DIABETES REGISTER

There is no national diabetes register.

● Existing register ● No register  
● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Moldova uses national guidelines from the Ministry of Health and healthcare professional organisations. The main 2012 clinical protocol covers diabetes care in primary care settings while other guidelines cover primary prevention and care for complications. Whether there is a monitoring protocol to assess the implementation of guidelines could not be confirmed.

### DIABETES AND PREGNANCY

Data on the prevalence of pre-existing diabetes in pregnancy are routinely collected. It was not known if diabetes screening is offered to pregnant women.

### RENAL CARE

The inclusion of renal screening in the national diabetes plan could not be confirmed. Some screening options are available but treatment options are said to be very limited, particularly in rural areas.<sup>93</sup>

### STRUCTURED EDUCATION

Diabetes education was reported to be insufficient to reach all people with diabetes due to lack of human resources and teaching materials. Family doctors provide education without receiving payment. Heavy workloads and a lack of financial incentives prevent people with diabetes from receiving education.<sup>92</sup>

### EYE CARE

The frequency of eye screening was unknown. According to the literature, services exist, but cost and accessibility appear to represent barriers for the majority of people with diabetes. An eye care programme was announced to address these issues but its implementation could not be confirmed.<sup>43</sup>

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is not a speciality in Moldova. Diabetes care is covered in the general nursing curriculum and nurses also learn while engaged in diabetes care. The role of nurses in diabetes management was unknown. There are calls in the literature for more responsibility to be devolved to nurses in diabetes care.<sup>92</sup>



# ROMANIA

Since the previous *Policy Puzzle* in 2011, Romania's national diabetes register for children has been completed, as have local registers for adults. The national diabetes plan continues, although concerns over resources persist. The latest epidemiological survey revealed much higher diabetes prevalence than previously thought – further supporting the 2011 call for action regarding awareness and prevention.

## ■ POLICY

### NATIONAL PLAN

Diabetes is among Romania's health priorities. The country has adopted a national declaration on diabetes in 2013 and has joined international initiatives dedicated to the prevention, control and treatment of diabetes. Romania is currently implementing a national diabetes plan focusing on providing healthcare for people with diabetes. This includes screening and treatment guidelines, resources for diabetes care and related complications, and support for self-management.<sup>94</sup> The Ministry of Health and patient and healthcare professional organisations were involved in consultations of this plan. Some stakeholders reported that diabetologists have been pushing to maintain the national diabetes plan.

Associations active in diabetes stated their belief that the plan has strong political support, and is well implemented with involvement of patient and healthcare professional organisations. However, adequate resources do not appear to have been allocated; some stakeholders reported that no funds are allocated to diabetes screening or training for certain specialists, such as podiatrists.

### PREVENTION

Romania has national prevention policies focusing on diabetes, although details of funding and monitoring are unknown. Some stakeholders have also submitted a national programme for diabetes prevention (primary,

secondary and tertiary) but this has not been adopted and negotiations with the Ministry of Health are still ongoing. These stakeholders also report that resources allocated to a number of prevention activities have been reduced and are insufficient – an indication, according to the stakeholders, of a lack of political will. These groups also questioned whether current prevention policies are targeting high-risk population. However, they recognised that professional and patient organisations, which themselves organise diabetes awareness campaigns, are recognised as key stakeholders in prevention.

### FUTURE DEVELOPMENT

It is hoped that the national diabetes prevention programme will be adopted and implemented in coming years, especially given the alarming results of a recent epidemiological study on diabetes.

*On what does your organisation base its assessment of current policies?*

*"Our concerns regarding public programmes stem from the reduction in funding allocated to active detection of diabetes in recent years. There is little hope for recognition of the role of education in the treatment and prevention of diabetes."*

*The Romanian Society for Diabetes, Nutrition and Metabolic Diseases*

### INFORMATION SOURCE

Information on Romania was collated from two stakeholders and desk research.

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**5.1%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**5.4/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**960,300** (total adult population: 14,914,530)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**11.6%** (2013)

#### REPORTED TOTAL INCIDENCE

**4.5/1,000** (2013)



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

There is a national diabetes register for children, which is updated every year and is now complete. Local records are kept for adults with diabetes.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Romania uses international guidelines and national guidelines from the Ministry of Health as well as those from healthcare professional organisations. These include guidelines from ADA/EASD (2012) and national guidelines for specialised care for diabetes and gestational diabetes (2009, 2013). There is no monitoring protocol in place to assess the implementation of guidelines.

### DIABETES AND PREGNANCY

Whether routine data collection takes place for diabetes in pregnancy could not be clarified. The latest guidelines recommend that all pregnant women should be offered diabetes screening, but the decision to offer this test is the responsibility of individual doctors.

### RENAL CARE

Screening for renal complications is included in the national plan, and screening and treatment services are available in Romania with good-quality care.

### STRUCTURED EDUCATION

Diabetes education is offered to all people with diabetes and their relatives upon diagnosis, and when treatment changes or difficulties occur in glycaemic control. There are good tools for education and appropriate health professionals are present in the community to conduct activities.

### EYE CARE

Eye examinations were reported to be offered at least once per year, as recommended in international guidelines. Screening and treatment services are available with adequate and appropriate healthcare professionals;<sup>43</sup> cost is not a barrier to these services. Most people with diabetes reportedly are aware of the importance of eye care.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is not recognised as a speciality. Diabetes care is included in general continuous training for nurses. Training in patient care and education is also organised by professional organisations. However, nurses reportedly have limited involvement in managing care for people with diabetes.



# RUSSIAN FEDERATION

Since the previous edition of *The Policy Puzzle*, published in 2011, Russia has maintained its national diabetes register and national plan for NCDs including diabetes. Guidelines covering all aspects of diabetes prevention, control and treatment have been updated. Although prevalence data vary widely from one source to another, all point towards an increase in diabetes prevalence.

## ■ POLICY

### NATIONAL PLAN

Diabetes appears to be on the political agenda in Russia: there is a national resolution on diabetes and the country has joined international initiatives on the prevention, control and treatment of diabetes. A national plan for NCDs including diabetes is being implemented and a national diabetes plan has been announced for the near future.

The NCD plan reportedly includes primary prevention, and screening and diagnosis – including for high-risk populations. The plan was reportedly developed through consultations involving the Ministry of Health, the Ministry of Finance, and healthcare professional and patient organisations. The budget for this plan was unknown.

Although the objectives of the plan address key diabetes issues, associations working in diabetes argued that the plan has not been allocated adequate financial, human and technical resources. Stakeholders were divided as to whether there is strong political support for the plan or whether patient and healthcare professional organisations are involved in its implementation.

### PREVENTION

Russia has national and regional prevention policies on all major risk factors, although the budget and monitoring for these policies were unknown. Associations active in diabetes again stated that these policies lack strong political support and adequate resources to achieve their objectives. However, they added that patient and healthcare professional organisations are regarded as key stakeholders in the implementation of these policies. Associations did not share the same assessment as to whether high-risk groups are adequately targeted by the current policies.

### FUTURE DEVELOPMENT

Policies on diabetes will be affected by future changes in the federal policy framework: the federal programme for NCDs is coming to an end and a national diabetes plan has been announced. Among other recommendations regarding care provision, the literature calls for more constructive support for self-management through routine primary care visits and from physicians.<sup>45</sup> Nurses should also be given greater responsibility in education, care and management in order to minimise complications.<sup>45</sup>

*“As elsewhere in the region, prevalence has increased dramatically over the last decade. These figures call for an urgent policy response to curb incidence and to further improve outcomes through continued health system strengthening.”<sup>47</sup>*

### INFORMATION SOURCE

Information on the Russian Federation was collated from two stakeholders and desk research.

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**10.0%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**12.1/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**11,195,300** (total adult population: 96,626,630)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**3.5-7.0%** (2014)

#### REPORTED TOTAL INCIDENCE

**2.6/1,000** (2014)

## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated



## INFORMATION SYSTEM



DIABETES REGISTER

There is a national diabetes register but it was reported to be incomplete.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Russia uses international guidelines and national guidelines from healthcare professional organisations and health authorities (2012, 2013). These guidelines cover all topics relevant to diabetes prevention, care and management. No monitoring protocol is in place to assess the implementation of these guidelines.

### DIABETES AND PREGNANCY

There is routine data collection for the prevalence of gestational diabetes and pre-existing diabetes, outcome data are reportedly collected in certain regions. It was unknown which pregnant women are offered diabetes screening; collected information suggested that there may be regional variations in clinical practice.

### RENAL CARE

Renal screening was said to be included in the national plan for NCDs. Screening and treatment options are available in the country, except renal dialysis at home.

### STRUCTURED EDUCATION

Diabetes education is recommended to all on a regular basis and efforts have been made to improve access to structured education.<sup>75</sup> However, a number of sources stated that a lack of resources and uneven uptake of diabetes education prevents effective education being evenly disseminated throughout the country.<sup>47</sup>

### EYE CARE

Annual eye examinations were reported to be offered to people with diabetes. Although awareness on eye care could not be confirmed, most people undergo such examinations at the recommended frequency. Screening and treatment services are available in the community but it was unknown whether cost is a barrier to either.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is not a speciality in Russia. Training in diabetes care is either provided during employment or through each nurse's personal resources. The involvement of nurses in diabetes care and management was reported to be limited; this is mainly carried out by specialist doctors.<sup>47</sup>



# SERBIA

As announced in 2011, Serbia's national health authorities have adopted new national guidelines for diabetes as well as national plans for diabetes and NCDs respectively. However, stakeholders were not in agreement as to whether these have been fully implemented. National estimates of diabetes prevalence remain stable but the gap is growing between national data and international estimates.

## ■ POLICY

### NATIONAL PLAN

Diabetes was cited as a health priority by the Serbian health authorities due to the burden it creates throughout the country. However, some stakeholders maintained that this commitment has not been translated into tangible action. Serbia has joined an international initiative on diabetes and is currently implementing a national diabetes plan, as well as a national plan for NCDs including diabetes – initiated in 2009.

These plans reportedly cover primary prevention, screening and diagnosis, care provision for people with diabetes, information collection systems for epidemiology and cost surveillance, and diabetes research. The Ministry of Health, national health agencies and patient and professional organisations were involved in the development of these plans. The budget for the plans could not be determined. Exchange of experiences with other countries and European and global strategies and guidelines on NCDs and diabetes were the plans' strongest sources of information. Monitoring and implementation of the plans are insured via a monitoring system and evaluations based on a list of measurable indicators for each of the plans' objectives, as well as measurable milestones and targets with associated deadlines.

However, associations working in diabetes were quite critical of these plans. They were divided in their appraisal of the role given to professional and patient associations in implementation. Moreover, they disputed whether the objectives of the plans are adequate given the current status of the diabetes epidemic, and cited a lack of real political support. They reported that the resources allocated to the plans remain insufficient and some associations explained that many provisions – including measurements – are not implemented effectively.

### PREVENTION

Serbia has national and regional prevention policies and campaigns with monitoring and measurement of impact during and after implementation through pre-defined indicators. Although the policies are relevant to diabetes prevention, some are included in national plans for other NCDs, such as cardio-vascular diseases.<sup>96</sup> Their budgets were unknown.

Most stakeholders reported being involved in the implementation of these policies and consider that high-risk groups are targeted adequately. However, all the groups argued that the resources allocated to prevention are insufficient. Their assessment of political support to prevention was inconclusive.

### FUTURE DEVELOPMENT

Some stakeholders expressed their hope that prevention will become a top priority on the health agenda in the political aftermath of the elections in 2013.

*Does your organisation consider diabetes to be a political priority in Serbia?*

*"No. There are plenty of documents but actions are not very well organised, especially in prevention."*

*A Serbian association active in diabetes*

*"Diabetes is among our main health priorities: it is the fifth leading cause of death and the fifth cause of the burden of disease in our country."*

*Serbian Institute of Public Health*

### INFORMATION SOURCE

Information for Serbia was collated from three stakeholders and desk research.

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**12.4%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**12.9/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**922,530** (total adult population: 6,272,540)

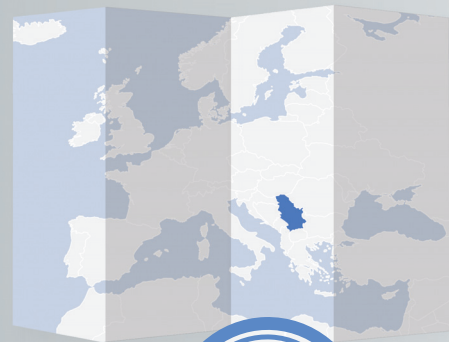
### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**8.2%** (2013)

#### REPORTED TOTAL INCIDENCE

**16.0/1,000** (2013)



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy  
● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

The national register is designed to include all newly diagnosed people with diabetes in order to monitor the progression of diabetes incidence. Therefore, it does not cover the country's entire diabetes population.

● Existing register ● No register  
● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Serbia is using 2012 and 2013 guidelines from IDF, ADA and EASD, as well as 2013 national guidelines from national health authorities. These cover all topics relevant to diabetes prevention, care and management. Whether there is a monitoring protocol in place to assess guideline implementation was unknown. Some stakeholders explained that they lack information on the implementation of recommendations for diabetes care.

### DIABETES AND PREGNANCY

It was unclear whether Serbia routinely collects data on diabetes and pregnancy. All pregnant women should be offered diabetes screening but some stakeholders reported that this directive is not well implemented.

### RENAL CARE

Whether the national plan includes renal screening was unclear. While various screening and treatment options for renal care appear to be available in Serbia, effective access to these services could not be confirmed.

### STRUCTURED EDUCATION

While all people with diabetes are theoretically offered diabetes education upon diagnosis, many stakeholders reported that education is actually rarely offered – and people have to rely on their own resources and any self-acquired knowledge of their condition.

### EYE CARE

Eye screening is offered at least once per year to people with diabetes, and trained professionals are reportedly available in the community. However, the uptake of screening by people with diabetes is unclear and some stakeholders reported affordability and awareness issues relating to eye screening and treatment services. Whether treatment services are readily available was unclear.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is not recognised as a speciality in Serbia. Nurses are trained while employed in diabetes care or have to seek training independently outside the country. The involvement of nurses in diabetes care and management remains limited.



# SLOVAKIA

Slovakia is currently renewing its national diabetes plan, which was awaiting approval at the time of writing. Since 2011, discussions have been held on the extension of the paediatric register to all people with diabetes but such a register has not yet been created. Guidelines have been updated and further guidelines are under development. According to national data, diabetes prevalence has remained unchanged – below international estimates.

## ■ POLICY

### NATIONAL PLAN

Diabetes was believed by all responding stakeholders to be among the country's health priorities. It was also reported that this is due to the health, social and economic problems associated with the condition. Slovakia is currently in between national diabetes plans. With the previous plan concluded, it was reported that a new plan is ready for approval, but has not yet been adopted.

The new national diabetes plan covers primary prevention, screening and diagnosis, healthcare provision, support for self-management, information collection systems, and research in diabetes. Stakeholders confirmed that this plan will enable wider screening and increased treatment activities, as well as prevention programmes aimed at children. It was reported that the Ministry of Health and patient and healthcare organisations were involved in the development of the plan. Information from international guidelines and strategies and the experiences of other countries were used as references.

With the new plan yet to be adopted, assessing its implementation was not possible.

However, associations working in diabetes indicated that while this plan is comprehensive, it does not benefit from strong political support and argued that the budget allocated will not be sufficient to achieve the plan's objects. Differing opinions were given regarding the involvement of stakeholders and the allocation of human and technical resources. Information on monitoring and implementation was not available.

### INFORMATION SOURCE

Information for Slovakia was collated from three stakeholders and desk research.

### PREVENTION

It was reported that the country has national diabetes prevention policies; and further prevention programmes are being prepared for the near future. Although the Ministry of Health acknowledges the importance of prevention, stakeholders reported more of a focus being placed on improving screening. A number of stakeholders stated that initiatives on healthy eating and physical activity exist, but described a lack of awareness of the prevention measures already in place. No budget estimates were provided for these prevention policies.

Associations active in diabetes confirmed the provision of human and technical resources for the prevention policies, but pointed to a lack of political support and financial resources to meet targets. Additionally, some reported that current prevention policies towards high-risk groups are not adequate and are not sufficiently inclusive of professional and patient organisations.

### FUTURE DEVELOPMENT

The hope was expressed that the national diabetes plan will be adopted in the near future, putting in place new measures to combat diabetes – starting with prevention, education and screening.

*According to your organisation, what are the strongest points of your country's diabetes policies? "There is a strong will to help (including political declarations) but they aren't translated into actions." Association of Diabetic Patients of Slovakia*



## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**10.2%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**13.6/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**553,160** (total adult population: 3,989,690)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**7.2%** (2013)

#### REPORTED TOTAL INCIDENCE

**16.0/1,000** (2012)



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy  
● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

There is a national register for children with diabetes. Discussions are underway to develop a register for adults.

● Existing register ● No register  
● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Slovakia uses national guidelines from the Ministry of Health and healthcare professional organisations: 2011 guidelines for healthcare provision and 2012 guidelines on treatment of type 2 diabetes. Guidelines are being developed for the treatment of renal complications. There is no monitoring protocol to assess the implementation of guidelines.

### DIABETES AND PREGNANCY

Routine data collection is in place for prevalence and outcomes of gestational diabetes. Compulsory screening is reportedly provided to all pregnant women in their second trimester.

### RENAL CARE

Screening for renal complications is included in the national diabetes plan but the frequency of screening is reportedly decided by individual diabetologists. Most renal screening and treatment options are available except transplantation and renal dialysis at home.

### STRUCTURED EDUCATION

Regulations state that structured education should be offered to all newly diagnosed people with diabetes or a family member. However, associations reported that healthcare professionals lack time to provide education and people with diabetes lack information on its availability and importance. As a result, diabetes education is rarely offered; people have to learn about their condition independently.

### EYE CARE

Eye screening is offered at least once per year to people with diabetes, and stakeholders reported adequate referral by doctors. Assessments differed regarding people's awareness of the importance of eye care and whether cost constitutes a barrier to eye screening and treatment. Nevertheless, appropriately trained healthcare professionals and screening and treatment services were reported to be available.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is recognised as a speciality. There is specific training and accreditation,<sup>95</sup> as well as continuous training. Although nurses are supposed to play a role in diabetes management for all people with diabetes, it was reported that their involvement remains limited.



# SLOVENIA

Since the previous edition of the *Policy Puzzle* was published in 2011, Slovenia has continued to implement its national diabetes plan. However, data collection remains an issue, and there are no plans to develop a comprehensive register for all people with diabetes.

## ■ POLICY

### NATIONAL PLAN

Diabetes has been pushed up the political agenda in order to mitigate policy gaps identified by the national health authorities. Slovenia has adopted a national resolution on diabetes and a national diabetes plan, which will be operational until 2020. Preparation has started on the national diabetes plan for 2020-2030.

The Slovenian diabetes plan includes primary prevention, screening and diagnosis, healthcare provision, support for self-management, information collection systems and research in diabetes. The Ministry of Health highlights the importance and complementary nature of these issues in efforts to address diabetes. National authorities and patient and healthcare professional organisations collaborated to develop the national plan. Further to the situation analysis by the diabetes working group, monitoring and implementation are ensured via a monitoring system covering outcomes and activity indicators, according to specific targets and milestones. The Ministry of Health reported that no budget has been specifically allocated to the plan, as this has been integrated into existing systems and programmes. However, some associations working in diabetes pointed out that some costs are in fact borne by stakeholders.

Some questioned political commitment to the plan and whether not having a dedicated budget is satisfactory. Although stakeholders were divided on their appraisal of the human and technical resources allocated to the plan, associations active in diabetes maintained that the plan is well implemented and inclusive towards patient and professional organisations.

### INFORMATION SOURCE

Information on Slovenia was collated from three stakeholders and desk research.

### PREVENTION

Following the completion of an EU project on prevention in Slovenia, diabetes-relevant national prevention strategies are integrated into plans for other NCDs. The strategies are developed at the national level and implemented regionally by local prevention centres.

Associations expressed similar concerns regarding these prevention policies to those relating to the diabetes plan: lack of political support and insufficient financial resources. They were also divided on their appraisal of the human and technical resources allocated to prevention policies, and on the role given to professional and patient organisations. Assessments of the targeting of high-risk group were inconclusive. However, the Ministry of health reports reforming the primary healthcare system in order to improve the country's approach to high-risk populations.

### FUTURE DEVELOPMENT

Slovenia has announced the adoption of another diabetes plan for 2020-2030. Additionally, both the authorities and the associations have identified public awareness, screening and improved coordination of care and support for self-management as key priorities for the near future.

*According to your organisation, which diabetes policy issues still need to be improved and why?*  
*"I believe that we need national register for all people with diabetes. Why? Because we do not know how many people with diabetes there are in Slovenia."*  
*A respondent from Slovenia*

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**10.3%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**14.6/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**191,260** (total adult population: 1,528,170)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**No data**

#### REPORTED TOTAL INCIDENCE

**No data**



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

Slovenia has a diabetes register for children with diabetes based on records held at the university paediatric centre in the capital, Ljubljana. Family medicine teams systematically collect local data.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Slovenia uses 2011 national guidelines from healthcare professional organisations for adults with diabetes, including prevention, screening of high-risk and early detection of diabetes. Health authorities also report using international prevention and care guidelines for children with diabetes and high-risk populations. No monitoring is in place to assess the implementation of guidelines.

### DIABETES AND PREGNANCY

Diabetes screening is offered to all pregnant women but data collection remains a major issue. Legal initiatives to allow routine collection of patient data (including data on diabetes and pregnancy) have been rejected due to concerns about data protection and regulation.

### RENAL CARE

It was reported that screening for renal complications is included in the national plan and that all relevant screening and treatment options are available.

### STRUCTURED EDUCATION

According to guidelines, education should be offered to all people who are newly diagnosed with diabetes.<sup>14</sup> If their glycaemic control becomes suboptimal or their treatment changes, people with diabetes should be provided with further education. Intensive education is provided for children and adolescents with diabetes.

### EYE CARE

Eye screening is offered at least once per year to people with diabetes and reportedly is well implemented. Stakeholders confirmed the availability of appropriate healthcare professionals and services for eye screening and treatment but some could not confirm the affordability of these services.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is not recognised as a speciality in Slovenia. However, health authorities reported the availability of specialist training as well as initial nursing education. Nurses receive training while employed in diabetes care. They are involved principally in prevention and education and problem solving in self-management. However, the way in which nurses are integrated into overall diabetes management is unclear.



# SPAIN

Spain has no national diabetes register but implementation of the national diabetes plan has continued since this was reported in the 2011 Policy Puzzle. National guidelines cover type 1 and type 2 diabetes and reported national prevalence has increased since previous reports.

## ■ POLICY

### NATIONAL PLAN

Diabetes is among Spain's principal health priorities due to the burden and socio-economic consequences provoked by the disease. Spain has joined European and global initiatives on prevention, control and treatment of diabetes and is implementing a national diabetes plan updated in 2012 – originally initiated in 2006.

The diabetes plan covers primary prevention, screening and diagnosis, care provision, support for self-management, information collection systems and research in diabetes. The inclusion of these fields allows a holistic approach to diabetes in Spain. The Ministry of Health and patient organisations reportedly were involved in the development of the plan; the involvement of other stakeholders could not be confirmed. The plan was informed by diabetes research and evaluations from the previous national plan. It contains measurable indicators and milestones as well as their evaluations. The budget for the plan was unknown.

Some associations working in diabetes stated that while objectives address current issues, the plan does not enjoy strong political support and lacks sufficient financial, human and technical resources. They added that although patient and healthcare professional organisations are involved in implementation, the plan is not well implemented overall. As implementation and resource allocation are regional competences, some stakeholders highlighted the disparities in these fields across regions.

### INFORMATION SOURCE

Information on Spain was collated from two stakeholders and desk research.

### PREVENTION

Spain has national and regional prevention strategies for health promotion, which address all the main risk factors for diabetes. National strategies are financed by the fund for regional capacity development and implemented at the regional level according to local needs.

Associations active in diabetes maintained that these policies and campaigns, like the national plan for diabetes, do not benefit from strong political support and highlighted insufficient levels of human and technical resources. The associations were divided in their appraisal of the financial resources allocated for prevention, of inclusiveness towards stakeholders, and whether high-risk groups are adequately targeted by the current strategies. Here also, regional variations were reported in these fields.

### FUTURE DEVELOPMENT

Discussions were reported of the possible development of an electronic platform recording clinical history and prescriptions to improve monitoring of care and allocation of resources.

*On what does your organisation base its assessment of the current plan?*

*“Each of the 17 autonomous regions is independent and sets its priorities for combating diabetes. Although the general objective is usually the same, the budget allocated to each plan is not.”*

*Spanish Diabetes Federation*

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

IDF ATLAS DATA<sup>6</sup>

### NATIONAL DIABETES PREVALENCE

**10.8%** of the adult population (2013)

### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**20.6/100,000** (2013)

### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**5,178,790** (total adult population: 35,997,180)

NATIONAL DATA

### REPORTED NATIONAL PREVALENCE

**12.0%** (2010)

### REPORTED TOTAL INCIDENCE

**No data**



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



DIABETES REGISTER

Although there is no national diabetes register, diabetes data can be retrieved from health interviews conducted nationally every three years.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Spain uses national and regional guidelines (2009, 2012) related to the national strategy. These cover screening and diagnosis as well as care and management of different types of diabetes and associated complications. There is a monitoring protocol in place to assess the implementation of these guidelines regularly.

### DIABETES AND PREGNANCY

It was not known whether Spain routinely collects data on the prevalence and outcomes of gestational diabetes and pre-existing diabetes in pregnancy. According to guidelines, screening should be offered to all women during pregnancy and six months after birth but implementation of these recommendations could not be confirmed.

### RENAL CARE

Renal screening is included in the national diabetes plan. Various screening and treatment options are available.<sup>44</sup>

### STRUCTURED EDUCATION

Diabetes education is offered rarely; people have to find and fund their own education. It was reported that initial information is provided, but no long-term education is provided other than by associations or through local initiatives.

### EYE CARE

Eye examinations should be offered at least once a year to people with diabetes but some stakeholders reported that this is not universal. Appropriate healthcare professionals are available and options for screening and treatment exist; but these are mainly present in private clinics and cost is reported to be a major barrier to access.<sup>43</sup>

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is not recognised as a speciality but diabetes is included in general initial and continuous training. Nurses are also provided with training while employed in diabetes care, whereby they can access specialist training in fields including education, prevention, care and treatment. The precise role of nurses in diabetes management remains unclear.



# SWEDEN

Although they vary according to sources, all diabetes prevalence estimates indicate an increase since 2011. National guidelines for diabetes were updated in 2014 and are monitored regularly by the national programme board. Diabetes is also addressed in the national plan for NCDs and regional initiatives on prevention.

## ■ POLICY

### NATIONAL PLAN

Sweden has adopted a national declaration on diabetes and national bodies whose aim is to improve regional action on diabetes care. A national plan was initiated recently for the prevention and treatment of NCDs, including diabetes. This NCD plan includes primary prevention, screening and diagnosis, healthcare provision, support for self-management and diabetes research. The plan was developed via consultations between the national health agency and patient and healthcare professional organisations. The total budget allocated to the plan is SEK 450,000,000 (EUR 49,817,888) over four years. The plan is supported by a baseline study and plan includes measurable indicators for each objective, as well as targets with deadlines.

Associations working in diabetes confirmed that the plan enjoys strong political support with appropriate objectives, and is well implemented. However, some highlighted inequalities between regions in terms of resources allocated and implementation. Appraisals were inconclusive regarding the recognition and involvement as key stakeholders of patient and healthcare professional organisations.

### INFORMATION SOURCE

Information on Sweden was collated from three stakeholders and desk research.

### PREVENTION

Prevention is a regional competence; Sweden has few regions with prevention policies related to diabetes. These cover obesity and overweight, healthy eating, physical activity, smoking and harmful use of alcohol. Regions monitor and assess the impact of these policies during and after implementation. Budgetary data were unavailable.

Associations working in diabetes field voiced criticisms of these policies, citing a lack of strong political support and inadequate human and technical resources; their appraisal of financial resources was inconclusive. They went on to state that such policies are not well implemented and that a number of stakeholders, including patient and healthcare professional organisations, are not recognised as partners in the process of implementation.

### FUTURE DEVELOPMENT

The first action plan detailing activities for the implementation of the NCD plan was adopted in June 2014. Further action plans will be adopted on a yearly basis throughout the four years of the NCD plan.<sup>97</sup>

*What is your organisation's assessment of the current national plan?*

*"As Swedish regions operate independently from national government in health matters, and the plan and guidelines are only recommendations, the level of implementation varies a lot."*

*Swedish Diabetes Association*

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**6.4%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**43.2/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**497,790** (total adult population: 7,491,030)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**4.0-6.0%** (2013)

#### REPORTED TOTAL INCIDENCE

**3.0/1,000** (2013)

## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated



## INFORMATION SYSTEM



### DIABETES REGISTER

While a national diabetes register exists for all people with diabetes, it was reported by national authorities to be incomplete.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Sweden uses 2014 national guidelines from the National Board of Health and Welfare. These were said to include diabetes screening and diagnosis as well as care pathways for different types of diabetes and diabetes complications. A monitoring protocol is in place to assess the implementation of guidelines.

### DIABETES AND PREGNANCY

Which data are routinely collected on diabetes and pregnancy, or which pregnant women are offered diabetes screening, could not be determined.

### RENAL CARE

Renal screening is included in the national plan. All screening and treatment options are available.

### STRUCTURED EDUCATION

Diabetes education is offered to people with poor glycaemic control and when treatment regimens change. It was unclear whether people with diabetes are offered diabetes education under other circumstances. The literature reports the existence of some standards on the content of diabetes education for certain groups.<sup>14</sup>

## CASE STUDIES

### EYE CARE

Eye examinations are offered every two to three years according to a person's risk status.<sup>43</sup> People with diabetes are well informed about the importance of eye care. Appropriate professionals and services for eye screening and treatment are available and cost was not reported to be a barrier.

### DIABETES SPECIALIST NURSING

Diabetes nursing is recognised as a speciality and diabetes care is covered in initial nurse training. Nurses are involved in the definition of treatment regimens, education and support for self-management, as well as psychological support. They work mainly with people with type 1 and type 2 diabetes in primary care and specialised care settings.



# SWITZERLAND

No national register or national plan for diabetes exist in Switzerland. However, national strategies are under discussion for care and prevention of NCDs including diabetes. Since the previous edition of the Policy Puzzle was published in 2011, a federal programme to improve the quality of care for NCDs has led to the development of new guidelines for type 2 diabetes.

## ■ POLICY

### NATIONAL PLAN

Diabetes is rising up the health agenda in Switzerland. There is no national plan on diabetes but there has been a regional plan in the canton of Vaud since 2010. Strategies are under discussion for care of diabetes and cardio-vascular diseases, as well as NCD prevention, although these cannot be adopted before the next legislature.

These strategies contemplate primary prevention within the NCD strategy, whereas care, support for self-management and information systems will be covered in the diabetes and cardio-vascular disease strategy. It was reported that the federal office for health, national health agencies, patient and healthcare professional organisations, and industry representatives will all be involved in the development of these strategies.

The national health authority reported that a baseline study, measurable milestones and targets and a monitoring system will be integrated to the strategies.

With the plans yet to be implemented, a full assessment by associations in the field could not be made. However, it was reported that objectives stated to date address key diabetes issues, and patient and healthcare professional organisations will be involved in implementation.

### PREVENTION

Switzerland has both national and regional prevention campaigns and programmes covering all risk factors for diabetes. The budget allocated to prevention was reported to be CHF 40-50 million (EUR 32-41 million), with prevention programmes and campaigns monitored and assessed during and after implementation. There is reportedly no national-level prevention strategy providing

a common framework for all risk factors. This is expected to be the aim of the NCD strategy currently under discussion. Moreover, as prevention is a regional and local competence, national strategies and programmes rely on local implementation.

Some stakeholders described a difficult political environment for prevention – as demonstrated by the rejection of the last federal law on prevention. Associations working in diabetes also warned that resources allocated to prevention are insufficient and that high-risk groups may not be effectively targeted. However, they did report being involved in the implementation of these campaigns.

### FUTURE DEVELOPMENT

Based on their knowledge of the Swiss decision-making process, stakeholders hope to see the two national strategies adopted in the next five years. In the meantime, they hope to have baseline coverage for diabetes care extended to new services, such as foot care.

*What is your organisation's assessment of Switzerland's policies on prevention?*

*"The political environment around prevention is not good: certain groups oppose legislating individual behaviours. They have a very 'libertarian' approach, and are opposed to federal laws on prevention."*

*Swiss Diabetes Association*

### INFORMATION SOURCE

Information on Switzerland was collated from three stakeholders and desk research.



## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**7.5%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**13.1/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**582,870** (total adult population: 7,084,510)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**5.0-7.0%** (2012)

#### REPORTED TOTAL INCIDENCE

**No data**



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

Current legislation prevents the creation of a national diabetes register in Switzerland. Nonetheless, initiatives exist to collect health data on certain population groups living with diabetes.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Switzerland uses international guidelines and those from healthcare professional organisations. Specific guidelines for prevention and care of type 2 diabetes have also been developed under the federal QualiCCare programme.<sup>98</sup> National guidelines cover screening and diagnosis, and care and management of diabetes and related complications. There does not appear to be a protocol in place to monitor the implementation of guidelines.

### DIABETES AND PREGNANCY

It could not be clarified whether or not data are collected on prevalence and outcomes of gestational and pre-existing diabetes. Screening is offered to all pregnant women and is reportedly being implemented well.

### RENAL CARE

All relevant screening and treatment options are available and accessible in Switzerland. It was not known whether renal screening will be included in the national strategies.

### STRUCTURED EDUCATION

Continuous diabetes education upon diagnosis to all people with diabetes and some of their relatives is covered by Switzerland's compulsory insurance package. However, stakeholders reported that access to education varies from one structure and level of care to another and according to the capacity of education sessions.

### EYE CARE

Eye screening is offered at least once per year – frequency differs according to risk status. Stakeholders reported that most people are aware of the importance of eye care, and screening and treatment services are available and affordable. Nevertheless, some stakeholders reported delays in screening due to late referral or check-ups being timetabled more than a year apart by certain professionals.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is recognised as a speciality, with dedicated initial training and optional continuous training. The importance of nurses in therapeutic education is described as being well established; nurses are also involved in the definition of treatment regimens and care management for all people with diabetes.



# THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA

Since the previous edition, the country has continued with a national plan on diabetes and a national register. Prevention policies exist for all major risk factors, and updated guidelines are present for diabetes. Prevalence estimates have increased since previous reports.

## ■ POLICY

### NATIONAL PLAN

Stakeholders recognised that diabetes is a huge problem in TFYR Macedonia. It is reportedly on the political agenda due to increasing rates of prevalence and associated costs. A national diabetes plan and another for NCDs including diabetes are being implemented – initiated in 2014 and 2009 respectively.

Primary prevention, screening and diagnosis, healthcare provision, support for self-management and information collection systems were reportedly covered in these plans. Stakeholders explained that this combination was chosen in order to reduce rates of diabetes incidence and improve diabetes care, despite a difficult context. The plans were developed with consultations including the Ministry of Health, national health agencies and organisations of healthcare professionals. The Ministry of Health used international guidelines on diabetes and NCDs and a national situation analysis as the principal sources of reference in the design of these plans. Monitoring and implementation is ensured via a dedicated monitoring system and evaluation of measurable milestones and targets with associated deadlines, according to a list of measurable indicators for each of the plans' objectives and informed by a detailed baseline study. Cost-effectiveness analyses will be included in the future.

Associations working in diabetes welcomed the fact that there is strong political support with objectives that address key issues throughout the country. Furthermore, the national plans are said to be well financed, with a budget of MKD 1,000,000,000 (EUR 16,208,269), and receive sufficient human and technical resources. Associations also confirmed that healthcare professional and patient organisations are recognised as key stakeholders in the implementation of these plans, but were unable to report whether the national diabetes plan is well implemented as this was only recently rolled out.

### PREVENTION

TFYR Macedonia has national prevention policies covering to diabetes.<sup>96</sup> These policies have a reported budget of MKD 6,000,000 (EUR 97,249) and include systems, with pre-defined indicators, to monitor and assess the impact of the policies during and after implementation.

Some stakeholders indicated that the policies, which effectively identify and target people at high risk, enjoy strong political support. However, it could not be clarified whether prevention policies receive adequate human and technical resources.

### FUTURE DEVELOPMENT

With the recent introduction of the 'e-health' system, it is hoped that data can be centralised and used to direct national diabetes policies and track risk factors among people with diabetes.

*What is your organisation's assessment of the current plans?*

*"The funds available are limited and their duration is uncertain due to the many political, organisational and financial changes in our country."*

*Macedonian Diabetes Association*

### INFORMATION SOURCE

Information for TFYR Macedonia was collated from two stakeholders and desk research.

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**11.8%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**5.8/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**223,780** (total adult population: 1,547,430)

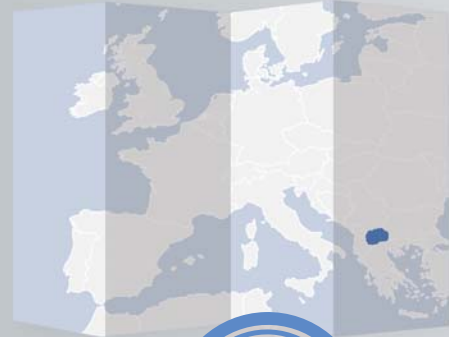
### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**No data**

#### REPORTED TOTAL INCIDENCE

**No data**



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



DIABETES REGISTER

The national register covers people who are on insulin therapy, mainly to monitor the cost of insulin therapy. This is being updated and remains incomplete.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

TFYR Macedonia uses international and Ministry of Health guidelines. It has 2011 guidelines for the treatment of type 2 diabetes and 2013 general diabetes guidelines, which cover all topics relevant to diabetes prevention, care and management. Legal requirements, supervised by the Ministry of Health, ensure compliance with guidelines but some stakeholders reported difficulties implementing these directives.

### DIABETES AND PREGNANCY

Routine data collection on diabetes and pregnancy is not yet in place, but there is a plan to collect this information in the national e-health system. Diabetes screening is offered to all pregnant women as associations report that they want to prevent complications from gestational diabetes.

### RENAL CARE

The national plan includes screening for renal complications. The full range of services is reported to be available except dialysis at home and transplantation.

### STRUCTURED EDUCATION

Diabetes education was said to be available mainly to people treated in large clinics and medical centres. Associations active in diabetes cited lack of time and shortages in human resources as reasons for the paucity in diabetes education on offer to people with diabetes and their relatives.

### EYE CARE

Eye screening is offered to people with diabetes at least once per year and reportedly carried out. Awareness among people with diabetes of the importance of eye care was reported to be high. The availability of eye screening and treatment services in the public sector is limited; affordability issues arise for people who are obliged to rely on the private sector for such services.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is not formally recognised as a speciality. Diabetes is covered in the general initial nursing curriculum and nurses are also trained while employed in diabetes care. Stakeholders stated that there are insufficient numbers of nurses for diabetes care, and thus the involvement of nurses is limited.



# TURKEY

Data collection for diabetes relies on general information systems, as it did when the previous Policy Puzzle was published in 2011, with no dedicated register. A national diabetes plan is being implemented and guidelines have been updated for healthcare professional organisations. No updated national data on diabetes prevalence were available.

## ■ POLICY

### NATIONAL PLAN

Diabetes is reported to be among Turkey's main priorities.<sup>99</sup> Turkey has a national declaration on diabetes and has joined an international initiative on prevention, control and treatment. At the time of writing, a national diabetes plan is being implemented. It reportedly covers primary prevention, care provision, self-management support and epidemiological surveillance. It was reported that the Ministry of Health, the Ministry of Finance, national health agencies and patient and healthcare professional organisations were involved in the development of the plan. Details of its budget and monitoring were unknown.

Some associations believed that there is strong political support for the plan and that patient and healthcare professional organisations are regarded as key stakeholders in its implementation. However, a number of stakeholders warned that insufficient financial, human and technical resources and structural barriers are impeding comprehensive implementation.

### PREVENTION

Prevention policies exist at the national level. Some stakeholders indicated that these policies focus on the different risk factors rather than on diabetes as a whole. It was not known how the impact of these policies is monitored. Budgetary information was not provided.

Associations working in diabetes noted that while there is strong political support for prevention, the financial, human and technical resources allocated to prevention policies are insufficient and targeting of high-risk groups is not always adequate. They added that implementation is made difficult due to low societal health awareness and a lack of commitment by ministries other than Health.

### FUTURE DEVELOPMENT

It is hoped that the ongoing health-sector reform will help to develop stronger systems for NCD data collection, and thus enable improved, more accurate systematic analyses.<sup>100</sup>

### INFORMATION SOURCE

Information on Turkey was collated from two stakeholders and desk research.

*“Is diabetes a top political priority in your country?”*

*“It is one of the top priorities, but not the top priority. The Ministry of Health carried out policies for all diseases.”*

*A respondent from Turkey*

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**14.6%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**No data**

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**11,785,650** (total adult population: 63,872,800)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**13.7%** (2010)

#### REPORTED TOTAL INCIDENCE

**No data**



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

There is no national register for diabetes.<sup>99</sup> Data on diabetes are collected via other health information systems but were reported to be incomplete.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Turkey uses guidelines from international organisations and healthcare professional organisations. The 2013 guidelines cover diagnosis and treatment of diabetes, associated complications and structured patient education. It is unknown whether a monitoring protocol is in place to assess the implementation of these guidelines.

### DIABETES AND PREGNANCY

The country does not collect data on pre-existing or gestational diabetes. Diabetes screening is offered to all pregnant women under the national plan for pregnancy.

### RENAL CARE

It could not be clarified whether renal screening is included in the national diabetes plan. Screening and treatment options surveyed were reported to be available in the country.

### STRUCTURED EDUCATION

Diabetes education is reportedly offered to all people with diabetes on a regular basis in a variety of formats. However, stakeholders made differing statements regarding implementation. Education sessions are also organised by associations active in diabetes.

### EYE CARE

Eye screening is conducted on a yearly basis. Stakeholders reported no major barriers to eye care and good availability and affordability of eye screening and treatment services. However, the literature indicates a lack of appropriate knowledge and consequent inappropriate behaviour regarding eye care among people with diabetes.<sup>101</sup>

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is a recognised speciality with dedicated initial training going beyond the initial nursing curriculum. Nurses also receive training while employed in diabetes care. They are involved in education, support and problem solving for self-management for all people with diabetes.



# UKRAINE

Since publication of the 2011 Policy Puzzle, Ukraine has continued with its national diabetes plan, which is currently under review. As announced in 2009, Ukraine has created a national diabetes register but this has yet to be adopted by the Ministry of Health. National prevalence estimates are similar to international data.

## ■ POLICY

### NATIONAL PLAN

Diabetes is among Ukraine's main health priorities due to its social and economic impact. Ukraine has a national resolution on diabetes and has joined an international initiative on prevention, control and treatment. The previous national diabetes plan ended in 2013. A revised version for 2014-2018 has been developed but not yet adopted due to the ongoing political instability in the country.

The new national diabetes plan reportedly covers primary prevention, screening and diagnosis, self-management support and diabetes research. The plan was developed in consultations involving the Ministry of Health, the Ministry of Finance and patient and healthcare professional organisations. According to one of the stakeholders, the budget of this plan has increased progressively, reaching UAH 598 million (EUR 37 million) in 2014.

The diabetes association in Ukraine stated that while the plan addresses the main issues via its objectives, it has little political support. The association explained that financial, human and technical resources are not equitably allocated between the plan's objectives, which affects implementation. Additionally, while the involvement of patient and healthcare professional organisations is acknowledged on paper, this is not translated into action.

### PREVENTION

Ukraine has national and regional prevention policies on selected risk factors for diabetes: smoking, obesity and overweight, and healthy eating. These were selected reportedly according to the prevalence of risk factors among the Ukrainian population.

Some diabetes stakeholders are quite critical of the prevention policies, reporting a lack of political support and insufficient financial, human and technical resources. They stated also that these policies do not adequately identify and target high-risk groups.

### FUTURE DEVELOPMENT

The main developments in diabetes policy were expected to occur in care provision. Stakeholders hoped that the future introduction of reference pricing will support affordability of diabetes treatment in the national plan. They also expected further improvements in diabetes education services and among healthcare professionals.

*“What is your organisation's assessment of the current policies related to diabetes?”*

*“The National Programme and preventive strategies are efficient when fully implemented. And one of the main success factors is financial support. However, nearly all financial resources are spent on insulin procurement and self-monitoring supplies. Thus, many aspects of the programmes have not progressed due to either lack or absence of financing.”*

*International Diabetes Associations of Ukraine*

### INFORMATION SOURCE

Information on Ukraine was collated from one stakeholder and desk research.

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**3.0%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**8.1/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**968,810** (total adult population: 28,723,580)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**2.9%** (2013)

#### REPORTED TOTAL INCIDENCE

**No data**

## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated



## INFORMATION SYSTEM



### DIABETES REGISTER

There is a national diabetes register but this is incomplete and has not been officially endorsed by the Ministry of Health. Ministry recognition is under consideration.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

Although guidelines for diabetes appeared to be available in Ukraine,<sup>19</sup> their content and use was unknown.

### DIABETES AND PREGNANCY

Data on the prevalence of pre-existing and gestational diabetes in pregnancy are routinely collected. According to some stakeholders, glycaemic testing is compulsory for all pregnant women during the first and last trimesters.

### RENAL CARE

Renal screening is included in the national diabetes plan and some services for screening and treatment are available. However, access to the most expensive options, such as dialysis, is limited<sup>95</sup> due to low availability in public facilities.

### STRUCTURED EDUCATION

According to national recommendations, diabetes education should be offered to all people with diabetes on a regular basis. However, some of associations report low uptake of diabetes education partly due to limited awareness and low literacy.

### EYE CARE

Eye screening is conducted annually. Most people with diabetes are aware of the importance of eye care and appropriate healthcare professionals are available to undertake screening. Treatment services are available but costs can be a barrier as only selected people with diabetes are eligible to receive free eye treatment.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is not recognised as a speciality in Ukraine.<sup>95</sup> Little was known about the training received by nurses regarding diabetes care. It was reported that nurse involvement with diabetes patients is limited.<sup>45</sup>



# UNITED KINGDOM

Unlike the previous edition of the *Policy Puzzle*, this profile reflects diabetes policies and care provision for all of the four Home Nations (England, Northern Ireland, Scotland and Wales) of the United Kingdom (UK). Therefore, analysing progress since 2011 was not possible.

## ■ POLICY

### NATIONAL PLAN

The status of diabetes on the political agenda varies from one nation to another. The UK has joined European and global initiatives on diabetes. It does not have countrywide plans for diabetes. Scotland and Wales are currently implementing diabetes plans (since 2010 and 2013 respectively); Northern Ireland is developing one; and England has completed its plan.<sup>103</sup> There is no coordinated approach to diabetes policy across the nations.

Moreover, content varies from one plan to another, and some nations' health systems or local authorities may run specific programmes covering certain elements individually. All the nations' plans had the involvement of the Ministry of Health and professional and patient organisations in their development; two of them also included other ministries and stakeholders. Limited information was reported on the budgets of these plans, their sources of information and monitoring. Some evaluation, situation analysis and auditing tools are in place to monitor the diabetes epidemic and policies to address it.<sup>44</sup>

Given these differences, it was difficult for stakeholders to provide a comprehensive appraisal of diabetes policies in the UK. However, it appears that the existence of a national diabetes plan is correlated with strong political commitment. Existing plans are described as adequate in each of the nations but all associations active in diabetes express concerns regarding the resources allocated to these plans. Stakeholder involvement and implementation appeared to vary from one nation to another.

### INFORMATION SOURCE

Information for the UK was collated from desk research and three stakeholders in three of the four UK nations..

### PREVENTION

Prevention is also a devolved competency with no overarching approach: nations have nationwide or local prevention programmes addressing all risk factors for diabetes. As with diabetes plans, the content, longevity, budget, monitoring and implementation of these programmes vary from one nation to another or within nations. However, many stakeholders highlight the role of evidence from research and cost analyses as key elements in the design of all of these programmes.

According to associations working in diabetes, these prevention programmes tend to be supported politically but lack sufficient resources to meet their objectives. Targeting of high-risk groups and involvement of all stakeholders appear to differ from one nation to another.

### FUTURE DEVELOPMENT

Following the adoption of a UK law on support for children with medical conditions at school, all nations will have to ensure its implementation. Otherwise, priorities for future policy differ between nations: from prevention of type 2 diabetes in England, to adopting a diabetes plan in Northern Ireland.

*Can you clarify which diabetes policies exist in the UK and which topics they cover?*

*"Diabetes is included in some local plans [in England] but there is no mandate to deliver on the areas you highlight. Scotland has a plan covering all these areas, although it is being reviewed. Wales has a plan. Northern Ireland's plan is in progress."*

*Diabetes UK*



# NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

# EPIDEMIOLOGY

## IDF ATLAS DATA<sup>6</sup>

### NATIONAL DIABETES PREVALENCE

**6.6%** of the adult population (2013)

### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**28.2/100,000** (2013)

### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**3,619,030** (total adult population: 49,170,800)

## NATIONAL DATA

### REPORTED NATIONAL PREVALENCE

**5.3-6.7%** (2013)

### REPORTED TOTAL INCIDENCE

**3.6/1,000** (2013)



## PREVENTION POLICIES



OBESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy  
● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

The UK does not have a national diabetes register. Data on diabetes is collated from doctors' registers in Wales, Northern Ireland and England, and from Scotland's regional register.

● Existing register ● No register  
● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

The UK uses guidelines from the different health authorities and, in some nations, from professional organisations. These guidelines are regularly updated and cover all topics relevant to diabetes prevention, care and management. Whether there is a monitoring protocol in place to assess guideline implementation was unclear.

### DIABETES AND PREGNANCY

Which data are routinely collected on diabetes and pregnancy was unknown. Further to recommendations, diabetes screening is offered to pregnant women with risk factors or symptoms of diabetes.

### RENAL CARE

Scottish and Welsh plans include renal screening. All the different screening and treatment options are reported to be easily available across the UK, although variations in access exist.

### STRUCTURED EDUCATION

All people with diabetes should be offered diabetes education upon diagnosis through dedicated programmes.<sup>105,106</sup> However, these programmes are not evenly implemented and some sources reported a very low offer and uptake of education among newly diagnosed people with diabetes.<sup>104,44</sup>

### EYE CARE

Under the UK eye-screening programme, eye screening is offered annually to people with diabetes. Stakeholders reported good levels of availability and affordability of eye screening and treatment services, as well as good awareness among people with diabetes. However, they highlighted inequalities in screening uptake and service availability between nations.<sup>104</sup>

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is a recognised speciality with national standards<sup>107</sup> and different specific initial and continuous training beyond the initial nursing curriculum. Diabetes nurses are involved in all aspects of diabetes management for all people with diabetes.



# UZBEKISTAN

Uzbekistan continues to operate its national diabetes register. National plans have been announced for diabetes and NCDs and are still under development. Reported national prevalence estimates appear to remain stable but vary widely from one source to another. Further topical guidelines are now implemented in diabetes care.

## ■ POLICY

### NATIONAL PLAN

According to the Ministry of Health, diabetes is among the country's main health priorities. Uzbekistan has joined European and global initiatives on diabetes, and its Ministry of Health announced the adoption of national plans for NCDs and diabetes in 2010. Associations working in diabetes explained that the national diabetes plan will be incorporated in the national plan for NCDs. As well as primary prevention, screening and diagnosis, care provision, support for self-management, information systems and research in diabetes, these plans will reportedly adopt medical, social and economic approaches to diabetes. In the meantime, the Ministry of Health was reported to have issued an order whereby all citizens should have their blood glucose levels measured once per year in public clinics. Additionally, implementation of some of the future components of these plans was reported to have started in a project targeting diabetes in rural populations. Supported by the Ministry of Health, this pilot project plans to improve detection services at the primary care level. Stakeholders were unable to describe the budget and monitoring of these plans.

The national plans have yet to be adopted, so assessment by local stakeholders was difficult. However, the associations stated that patient and healthcare professional organisations are regarded as key stakeholders and the objectives that have been announced are adequate to tackle the current diabetes epidemic.

### INFORMATION SOURCE

Information for Uzbekistan was collated from two stakeholders and desk research.

### PREVENTION

Nationwide prevention policies on diabetes are in place, with a particular focus on children and young people – within the 2014 national frameworks for child health. It was also reported that further policies are in the process of development for implementation in the near future.<sup>108</sup> No information on their monitoring or budget could be obtained.

Stakeholders could not provide a detailed assessment of these policies. However, they reported that patient and healthcare professional organisations are recognised as key players in the implementation of prevention policies, on the top of their own activities in this field. Stakeholders stated their belief that the future national diabetes plan will further support prevention; the Ministry of Health was said to take into account the key role of prevention in reducing treatment costs.

### FUTURE DEVELOPMENT

Stakeholders were looking forward to the adoption of the national diabetes plan and progress on care and prevention. In the field of care, some stakeholders highlight the need for improved support for self-management, including access to monitoring devices and diabetes education.

*“What reasons or factors motivated your country's decision to adopt national plans for diabetes?”*

*“Because of the increase and prevalence of diabetes, and high related levels of disability and mortality.”*

*Diabetes stakeholder in Uzbekistan*

## NATIONAL DIABETES PLAN



NO PLAN



IN PROGRESS



EXISTING PLAN

## EPIDEMIOLOGY

### IDF ATLAS DATA<sup>6</sup>

#### NATIONAL DIABETES PREVALENCE

**5.1%** of the adult population (2013)

#### INCIDENCE OF TYPE 1 DIABETES IN CHILDREN UNDER 14

**1.2/100,000** (2013)

#### ESTIMATED NUMBER OF ADULTS WITH DIABETES BY 2035

**1,733,910** (total adult population: 24,267,330)

### NATIONAL DATA

#### REPORTED NATIONAL PREVALENCE

**5.0-7.0%**

#### REPORTED TOTAL INCIDENCE

**0.6/1,000** (2013)



## PREVENTION POLICIES



OBSESITY AND OVERWEIGHT



HEALTHY FOOD AND DIET



PHYSICAL ACTIVITY



SMOKING



HARMFUL USE OF ALCOHOL

● Existing policy ● No plan or policy

● Not communicated

## INFORMATION SYSTEM



### DIABETES REGISTER

There is a national register for all people with diabetes. Although stakeholders acknowledge its importance, the register, which relies on reporting by doctors, remains incomplete.

● Existing register ● No register

● In progress

## CARE PROVISION

### GUIDELINES IN DIABETES

International guidelines covering diabetes prevention, care and management are used in diabetes. Some sources also reported the use of some national guidelines. It could not be clarified whether there is a monitoring protocol in place to assess the implementation of these guidelines.

### DIABETES AND PREGNANCY

Data on the prevalence for pre-existing diabetes in pregnancy are routinely collected. All pregnant women are offered complete examinations, including diabetes screening, in screening centres. Whether these examinations should be made obligatory within the national diabetes plan is under discussion.

### RENAL CARE

It could not be clarified whether renal screening will be included in the national diabetes plan. Most screening and treatment options – except home dialysis and transplantation – are publically available and accessible.

### STRUCTURED EDUCATION

Diabetes education is offered to all people and their relatives on a regular basis via diabetes classrooms, created within regional endocrinology dispensaries. Some stakeholders cited education as one of the strongest points of current diabetes policy.

### EYE CARE

Guidelines recommend that eye screening should be offered at least once per year to people with diabetes. Screening is reportedly undertaken at this frequency. The availability and affordability of eye screening and treatment services may be an issue for some people as such services have yet to be made available in all regional public endocrinology clinics.

## CASE STUDIES

### DIABETES SPECIALIST NURSING

Diabetes nursing is not a recognised speciality. Nurses learn while employed in diabetes care or via training programmes provided by associations active in diabetes. Nurses are mainly involved in individual case management and some have received specific training in podiatry. However, the role of nurses reportedly remains limited to specialised care settings.

# CONCLUSION AND THE WAY FORWARD

## EPIDEMIOLOGY AND INFORMATION SYSTEMS

More than 56 million people are living with diabetes in Europe, 8.5% of adult population. With the burden of diabetes increasing throughout Europe, the number of people affected by the disease is set to reach nearly 70 million by 2035. Some European countries have made encouraging progress in their response to the diabetes epidemic since 2011. However, most of the recommendations made in the previous *Policy Puzzle* to tackle the growing diabetes-driven public health challenge comprehensively and effectively have yet to be implemented universally across the region.

### NATIONAL DIABETES REGISTER



The 2011 *Policy Puzzle* called on European States to “collect, register, monitor and manage comprehensive epidemiological data”<sup>19</sup> on diabetes, highlighting the key role of diabetes registers. Since then, there has been an absolute increase in the number of countries with a national diabetes register:

in our survey, a total of 30 countries reported having some kind of diabetes register. However, barely half of these aim to include all people diagnosed with diabetes. In 11 countries with a diabetes register, these are considered incomplete. When investigating data for specific populations, such as pregnant women, our analysis revealed further gaps in data collection systems for diabetes. In 12 countries, no information is collected on the prevalence or outcomes of gestational diabetes and pre-existing diabetes in pregnancy. Only seven countries reported collecting data on these indicators. Additionally, the data on diabetes and pregnancy have not been fully integrated into national diabetes registers; the share of countries collecting data on diabetes and pregnancy does not differ significantly between countries with and those without a national diabetes register.

The fact that some diabetes registers have been developed and/or extended since 2011 is encouraging. However, our survey has confirmed that European countries face legal, political, structural and financial challenges to establish such information systems

(national registers in particular) and ensure that they are complete. Additionally, the diversity of the data collected, and variations in the collection methodologies and definitions have prevented collating of data into a uniform Europe-wide format.

Given the vital role of robust and comprehensive data to ensure adequate policy choices and high-quality care for people with diabetes throughout the continent, it is essential to sustain and increase the efforts that have been made to date to collect, monitor and analyse key information on the diabetes epidemic in Europe, according to shared European criteria.

## POLICY

### NATIONAL PLANS



This survey has underlined the crucial role played by national political will and national health policy frameworks to engender effective policy action for diabetes. Following repeated international and European calls for a comprehensive policy response to diabetes and other NCDs, the large majority of European countries have taken steps to address these public health challenges at the policy level. Currently, 30 countries are implementing a national plan addressing diabetes specifically or in a plan for NCDs. Another 10 have announced such plans for the near future. Furthermore, a shift is occurring in Europe's policy approach as more countries are moving towards national NCD plans including diabetes rather than stand-alone national diabetes plans.

However, Europe has a long way to go to respond to the call for a comprehensive multi-sectoral approach made in the 2011 UNGA Political Declaration and reiterated at the European level in the 2012 European Parliament resolution on diabetes. The 2011 edition of the *Policy Puzzle* called for full implementation of the UNGA Declaration. In 2014, while core elements, such as primary prevention, screening and healthcare provision, are addressed in almost all national plans for diabetes in Europe, some key sectors are missing entirely, not least diabetes research. Similarly, the recognition of civil society organisations should be acknowledged in national plans. Yet stakeholders involved in these plans remain largely confined to health – falling short of the whole-of-government and whole-of-society approach described in the UNGA Declaration.<sup>109</sup> The 2014 *Policy Puzzle* survey confirms the role of such declarations, as well as other European or global strategies and guidelines on diabetes and NCDs in catalysing national action. Indeed, the

majority of countries that have or are preparing a national plan cite such initiatives as key sources of information for their own plan, especially in the case of an NCD plan.

Gathering reliable information on the monitoring and implementation of national plans for diabetes in Europe proved problematic. The paucity of relevant information collected in 2014 suggests continued overall weaknesses in the delivery of national diabetes policies, despite marginal improvements. In the words of WHO Director-General Margaret Chan, "What gets measured gets done".<sup>19</sup> Today, this same call must be repeated in light of the gaps found by our survey. The lack of information on cost and the low use of cost-effectiveness analyses are an enduring concern. Just 10 out of 31 national health authorities surveyed on the budget for their national plan provided such information; only two countries confirmed the use of cost-effectiveness analyses when asked about the monitoring and evaluation components of their policies. While the cost of the diabetes epidemic was identified as a major concern for policy makers, this lack of information and the absence of analytical tools hamper



### **30 countries are implementing a national plan addressing diabetes specifically or in a plan for NCDs**

the implementation of national plans and subsequent future improvements. Therefore, in order to guide policy making and improve implementation, further efforts should be made to ensure proper and transparent budgeting and cost analysis of national responses to diabetes.

### PREVENTION



Our survey revealed that primary prevention is increasingly seen as a key priority for policy makers in Europe. Instruments for diabetes prevention are almost universally present in Europe: primary prevention policies and campaigns covering obesity and overweight, healthy eating, physical activity, smoking or harmful use of alcohol are reported in all but two European countries. Additionally, among the 45 European countries that reported currently implementing primary prevention policies or programmes, 37 cover all five of the major risk factors for diabetes. But even in countries where such policies or campaigns are in place, their structure and content vary – affecting the quality and impact of prevention initiatives on the ground.

Unfortunately, gathering reliable information on the monitoring and implementation of these programmes and policies was also difficult. As with national plans, the few data collected in this field highlighted serious gaps in the monitoring and evaluation of these policies. Moreover, having a comprehensive national overview of preventive initiatives and their impact is made more complicated by the numerous different programmes and levels of government involved. In this context, having strong monitoring and evaluation systems at the national level – as called for in the UNGA Declaration – should be a priority in future initiatives on prevention. Similar

**“ Progress has been made in the adoption of policy tools for the prevention, control and treatment of diabetes**

shortfalls were also found in both prevention policies and plans in terms of access to transparent cost information and whether this information is used to improve policy decisions. Of the national health authorities that were surveyed on budget, an even smaller number were able to provide estimates for prevention policies, compared to those providing estimates for national plans. The use of cost-effectiveness analyses in these policies remains an exception rather than the rule.

Progress has been made in the adoption of policy tools for the prevention, control and treatment of diabetes. All European countries reported implementing or developing policy tools in one or all of these fields. Yet gaps remain in the scope, inclusiveness, implementation and monitoring and evaluation of policies and plans. These gaps will have to be addressed in order to implement the international and European declarations to which European countries have committed, and ensure a comprehensive response to the challenges created by diabetes.

**“ Having systems in place to monitor implementation would create a culture of responsibility and accountability, leading to improved, more equitable care for all people with diabetes.**

## CARE PROVISION

### GUIDELINES IN DIABETES



It was encouraging to see that all 47 countries covered in this edition of the *Policy Puzzle* have some form of guidelines on diabetes. Most use a combination of national and international guidelines, facilitating the dissemination of best practices to healthcare professionals and people with diabetes. Type 2 diabetes care appears to be the most commonly covered area in guidelines, reflecting the Europe-wide desire to prevent and reduce the risk of serious complications resulting from this increasingly widespread disease.

It was clear, however, that while guidelines exist, their implementation and monitoring is severely lacking across the European region, so much so that stakeholders are not always aware of the existence of guidelines or their degree of implementation. It is vital that different stakeholders within countries work together to ensure that where guidelines exist, adequate resources are allocated for their dissemination and implementation across the health system, making sure that all health professionals working in diabetes are up to speed on current best practices for diabetes care, prevention and treatment. This will permit access to equal standards of care for people with diabetes across the country. Having systems in place to monitor implementation would create a culture of responsibility and accountability, leading to improved, more equitable care for all people with diabetes.

### CASE STUDIES

#### DIABETES AND PREGNANCY



The previous edition of the *Policy Puzzle* demonstrated that data for diabetes and pregnancy were not easily accessible and that the purpose of their collection and use was unclear. Sadly, three years on, the situation has not changed. Accurate data on the prevalence of diabetes in pregnancy can aid national health policy makers to understand the extent of the problem and take steps for early detection and treatment. Data on outcomes of gestational diabetes demonstrate whether practices are effective in reducing the prevalence of the condition.

Further to the call in the 2011 edition of the *Policy Puzzle* for interventions targeting pregnant women, it was encouraging to find that the majority of countries surveyed routinely conduct screening for diabetes among pregnant women. However, barriers to access and variations in the availability and implementation of guidelines need to be addressed urgently.

## EYE CARE



Responding to our survey of the availability of eye screening and treatment services, the majority of countries stated that eye screening is offered or recommended at least once per year. However, there are significant differences in terms of equal accessibility within countries and across the continent.

While screening is recommended at given frequencies, reality appears not to reflect entirely the recommendations. Eye treatment services are widely available across most of Europe and there appears to be a link between eye screening and treatment services. However, access to these services is unequal within countries. In-country access difficulties and cost issues were reported as the key reasons for these inequalities.



**In-country access difficulties and cost issues were reported as the key reasons for these inequalities**

It is crucial that publicly supported healthcare services for retinopathy function effectively and are distributed adequately throughout a country in order for these to be available and accessible to the majority of people with diabetes.

## RENAL CARE



It is evident that while the screening options surveyed here for kidney complications are widely available throughout Europe, the principal concern lies with the availability and accessibility of the various treatment options for renal complications.

Apart from antihypertensive therapies, the other treatment options surveyed here (renal dialysis in hospitals and at home, and transplantation) require highly trained healthcare professionals and specialist medical devices, which are often expensive. Responses from some stakeholders, particularly in Eastern Europe, testified to the difficulties encountered by certain population groups to obtain access to such services, either due to cost barriers or physical accessibility issues.

Due to inadequate access to the most expensive renal treatment services and options, improved routine screening and economical treatment options – antihypertensive therapies, lifestyle changes and increased awareness of the complication – are needed. This would go a long way towards preventing or delaying the need for expensive treatments.

## STRUCTURED EDUCATION



With nearly 70% of countries recommending structured education for all people newly diagnosed with diabetes, efforts are clearly being made to ensure the provision of some level of education. However, and in spite of the recommendations on education in the previous edition of the *Policy Puzzle*, our findings imply that there is a lack of continuity in education throughout the lifespan of people with diabetes, and a lack of general education for family members. A total of 36 countries do not recommend universal continuous education to people with diabetes; 37 countries reported not providing relevant education to family members.

Furthermore, the present survey highlighted general implementation issues regarding the provision of diabetes education. For instance, we found no link between recommendations on structured education and practice itself: having guidelines does not necessarily translate into practice; and guidelines may not always be required for education to be delivered.

**“ Improved continuous constructive education unquestionably leads to improved self-management and reduced risks for diabetes complications**

There are several issues that appear to act as barriers against people with diabetes obtaining diabetes education. Lack of time, heavy workloads and inadequate training for healthcare professionals as well as cost and a lack of standardisation in practices were all reported to prevent people from receiving relevant education. This has resulted in both in-country as well as pan-European inequalities in access to diabetes education.

Diabetes education is a key component of overall diabetes care and management. All European countries should ensure equal access to continuous good-quality diabetes education for people with diabetes and their family members. Trained, dedicated healthcare professionals should be evenly distributed within countries. They should provide diabetes education according to national quality standards at an affordable rate for all people with

diabetes and their family members. Improved continuous constructive education unquestionably leads to improved self-management and reduced risks for diabetes complications.

## DIABETES SPECIALIST NURSING

It must be reiterated, as stated in the previous *Policy Puzzle*, that diabetes specialist nurses can and do play a significant role in diabetes care and management for all people with diabetes at a reduced cost for health systems. We found that nurses work in diabetes in all European countries, but their status, role, training and level of involvement differ widely.



The link between status and role was apparent. In the majority of countries with a recognised diabetes nursing speciality, nurses play a key part in overall diabetes care for all people with diabetes. Also, some countries have nurses specialised in various aspects of diabetes management despite not awarding them official status. More can be done to recognise the added value that nurses can bring to diabetes care. This can be achieved either by developing a recognised speciality or by having further specific training for nurses in all fields of diabetes care. The latter is of note: the majority of countries reported that nurses receive training while employed in diabetes care.

**“ Our audit highlighted some shortcomings in care delivery due to the heavy workload of healthcare professionals**

Our audit highlighted some shortcomings in care delivery due to the heavy workload of healthcare professionals. Further training would permit nurses to take a greater role in more aspects of diabetes, balancing responsibilities between different healthcare professionals in order to improve the distribution of care provision across the health sector. The potential for the involvement of nurses in diabetes care teams throughout Europe must be fully realised.





# THE WAY FORWARD



**Information systems:** Maintain and increase efforts to collect, monitor and analyse key data on the diabetes epidemic in Europe, according to common European criteria.



**National plans:** Continue efforts towards a dedicated national strategy for diabetes with adequate implementation and monitoring systems. This and sufficient nationwide resources and multi-stakeholder involvement at all stages and levels would facilitate an effective response to diabetes at the national level.



**Prevention:** Despite noticeable progress, gaps remain in the scope, inclusiveness, implementation and monitoring, and evaluation of prevention policies and plans. These gaps will have to be addressed in order to ensure a comprehensive response to the challenges created by diabetes.



**Guidelines:** Systems should be in place to monitor the implementation of guidelines in order to create a culture of responsibility and accountability, leading to improved, more equitable care for all people with diabetes.



**Pregnancy:** Improve data collection on diabetes and pregnancy in order to help national health policy makers understand the extent of the problem and enable them to take steps for improved early detection and treatment. Barriers to access to diabetes screening and variations in the availability and implementation of guidelines need to be addressed urgently.



**Eye care:** Improve the availability and accessibility of eye screening and treatment services by ensuring that publicly supported healthcare services for retinopathy function adequately and are effectively distributed throughout the country.



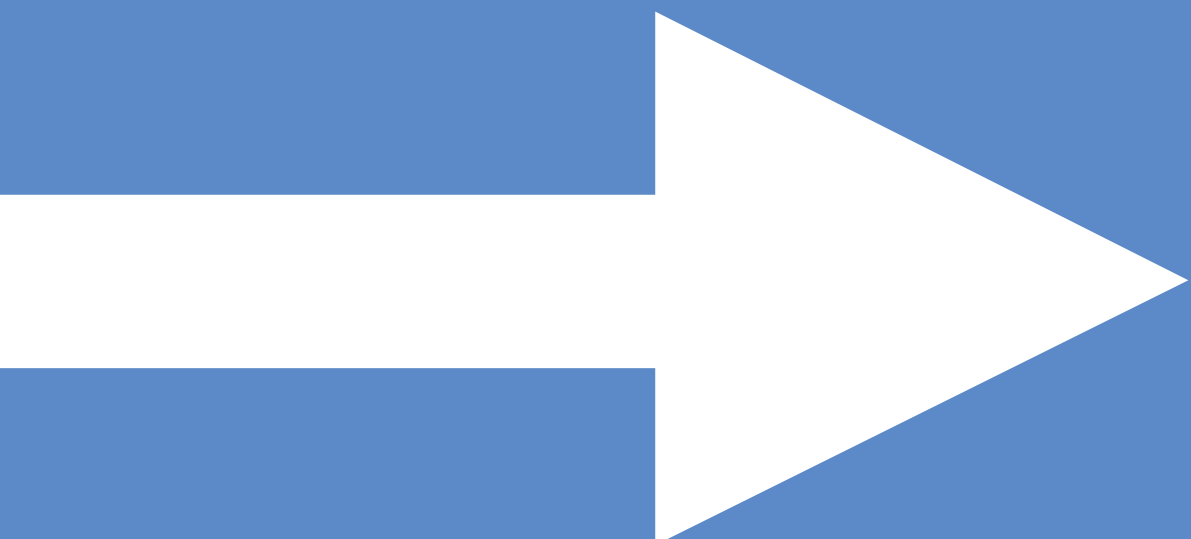
**Renal care:** Improve access to routine screening and provide economical treatment options in order to prevent or delay the need for expensive treatments.



**Structured education:** Ensure equal access to continuous good-quality diabetes education for people with diabetes and their family members. Trained, dedicated healthcare professionals evenly distributed throughout countries should provide diabetes education according to national quality standards at an affordable rate for all people with diabetes and their family members.



**Diabetes specialist nursing:** Provide status and further training to nurses to enable them to take a greater role in more aspects of diabetes care, balancing responsibilities between different healthcare professionals and improving the distribution of care provision across the health sector.



# ANNEX

## DIABETES RESEARCH FUNDING AND ACTIVITY IN EUROPE

Identifying funding for diabetes research in Europe has been a central task of the Alliance for European Diabetes Research (EURADIA) and its partner organisations. In order to develop a cohesive toolkit to provide a rationale for diabetes research advocacy, EURADIA brought a number of organisations together and in 2010 reported on the DIAMAP Road Map for Diabetes Research in Europe. This report can be downloaded at the DIAMAP website, and videos of presentations from the EURADIA DIAMAP symposium held during the EASD meeting in Lisbon in 2010 can be found at EURADIA's website (see Further resources on back inside cover for a full list of websites).

The DIAMAP report provided an overview of available funding and resources for research, followed by an illustrated road map strategy for future research across six fields (genetics and epidemiology, pancreatic islets and beta cell function, pathophysiology and metabolism, clinical science and care, micro- and macro-vascular complications and cross-cutting horizontal issues). Since the DIAMAP project was reported, several research organisations in other disease areas have been working on research road maps based on methods similar to those used by EURADIA. Eventually, it will be possible to make more detailed analyses of the resources available for diabetes research within the larger field of chronic disease. The European Society of Cardiology is concluding its own survey and database of research funding: CardioScape, a survey of the European cardiovascular research landscape. A broader project, Mapping Chronic Non-Communicable Diseases Research Activities and

their Impact (MAPPING NCD), is looking at funding and activity across the major NCDs – diabetes, cardiovascular disease, respiratory diseases, cancers and mental health.

Since 2010, DIAMAP has been cited by researchers preparing submissions to grant funding agencies, including the European Commission (EC). National and European funding agencies have used DIAMAP as a resource when developing their funding programmes. Diabetes and obesity projects funded by the EC's 7<sup>th</sup> Framework Programme for Research and Technological Development (FP7) can be viewed at the EC website; and an overview of the funding for these 34 large-scale projects and how they span the diabetes research field is summarised in the subsequent table.

Involvement of EURADIA in FP7 has not been limited to DIAMAP, but extends to partnering in the InterConnect project, which aims to establish a global network that will facilitate the co-ordination of population research on the interaction between the genetic and environmental factors driving obesity and diabetes. InterConnect began life as an EC event, 'Diabesity – A world-wide challenge – Towards a global initiative on gene-environment interactions in diabetes/obesity in specific populations', held in Brussels in 2012.

Another indication of diabetes research activity in Europe is the participation of the European Association for the Study of Diabetes (EASD), which currently has over 7,500 members from more than 130 countries worldwide. The EASD annual meeting attracts upwards of 17,000 participants, and covers basic and clinical research developments in diabetes. A marker of research activity in diabetes is the submission of abstracts, which rose from 2,008 in 2004 to 2,321 in 2013 (with an overall acceptance

rate of less than 50%). Although the highest number of submissions came from the USA, Japan, UK and Germany, more than 50% came from the rest of Europe. Visit EASD's website for further statistics on participation in its annual meetings. The quality of the abstracts was underscored in a study reporting on the acceptance rate of abstracts for the annual meeting in 2004 and their subsequent publication rate – reconciling the quality of the research presented against the stringent criteria of acceptance for publication after peer review.<sup>110</sup> The 2004 meeting received 2,008 abstracts, 1,306 of which were accepted. It was found that the reviewer score for abstracts correlated closely with eventual publication. A secondary objective of the study was to compare the quality of the abstracts at an EASD meeting with other major medical conferences. The percentage of abstracts published in the four years following the 2004 meeting was 51% – a proportion comparable with or greater than other major medical conferences in Europe.

We anticipate that the DIAMAP update will take at least until the end of 2015 to complete, by which time we hope to have a comprehensive view of funding for research activities throughout Europe. Interest in the DIAMAP project is welcome from all stakeholders: people with diabetes, healthcare professionals, scientists and policy makers. We look forward to hearing from you and welcome your comments.

## Contact

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EUR 157.3 million	Prevention/epidemiology	Diagnostics	Complications	Towards novel therapy	Overall strategy framework
	Clinical trials to prevent complications				DIAMAP Road Map for European Diabetes Research: InterConnect – a global initiative on gene-environment interaction in diabetes and obesity
	Monogenic diabetes		Beta-cell strategies		
Type 2 diabetes EUR 59 million	Gestational diabetes		Prepp 1 gene		
	Markers for nephropathy				
Type 1 diabetes EUR 39.3 million	Innovative type 2 diabetes management		Adipokines		
	Innovative type 1 diabetes management		Immunomodulators		
	Lifestyle of infants	Clinical trials	Beta cells in obese children		
	Islet auto-antigens				
Obesity EUR 33 million	Physical activity		Drug reprofiling		
			Gastro-intestinal peptides		
	Shift workers		Inflammation		
International EUR 12 million	Migrant populations (diabetes)				
Physical activity EUR 11.5 million	Response to physical activity and reduction in sedentary lifestyle				

Approximate distribution of funding for diabetes and obesity projects during the EC FP7 research programme, during which 34 research projects were funded. These data are from the FP7 research programme (Table 1 does not include other EU collaborative projects and individual grants on diabetes). These data are taken from the projects' final reports as reported by the coordinators.

This table is broadly based upon a figure originally shown as a slide during the IMI - JDRF Diabetes Patient Focus meeting, 20 May 2014, Brussels, Belgium <http://www.imi.europa.eu/events/2014/03/25/imi-jdrf-diabetes-patient-focus-meeting/>, thanks to Dr Karim Berkouk, European Commission for allowing use of this information.

## ACKNOWLEDGMENTS

**Dr Karim Berkouk**, Deputy Head of Unit of the European Commission Medical Research Unit in the Health Directorate of the Research and Innovation Directorate-General

**Dr Viktor Jörgens**, Executive Director, and the staff of the European Association for the Study of Diabetes

# LIST OF PARTICIPATING STAKEHOLDERS

## Albania

- Albania Diabetes Association

## Armenia

- Armenia Diabetes Association
- Ministry of Health

## Austria

- Austrian Diabetes Society
- Ministry of Health

## Azerbaijan

- Azerbaijan Diabetes Society
- Azerbaijan Diabetes League
- Azerbaijan Association of Endocrinology, Diabetes and Therapeutic Education
- Ministry of Health

## Belarus

- Belarussian Humanitarian Organisation

## Belgium

- Belgian Diabetes Association
- Diabetes Liga
- National Institute of Health and Disability Insurance - INAMI

## Bulgaria

- Bulgarian Diabetes Association
- Ministry of Health

## Croatia

- Croatia Diabetes Association (and their members)
- University Clinic for Diabetes, Endocrinology and Metabolism
- Croatian National Institute of Public Health
- Ministry of Health

## Cyprus

- Cyprus Diabetic Association
- Ministry of Health

## Czech Republic

- Czech Diabetes Society
- Union of Diabetes of the Czech Republic
- Ministry of Health

## Denmark

- Danish Diabetes Association
- Ministry of Health and Danish Health and Medicines Authority

## Estonia

- Estonian Diabetes Association
- Ministry of Health

## Faroe Islands

- Faroese Diabetes Association

## Finland

- Finnish Diabetes Association
- Hospital District of Helsinki and Uusimaa
- Ministry of Social Affairs and Health

## France

- French Diabetes Federation
- French Society of General Medicine

## Georgia

- Georgian Union of Diabetes and Endocrine Associations
- National Centre for Diabetes Research
- National Centre for Public Health

## Germany

- DiabetesDE  
(German Diabetes Association – DDH and Association of Diabetes Consulting and training professionals – VDBD) – part of DiabetesDE
- German Association of Diabetologists - BVND
- Institute of Diabetes Research and Metabolic Diseases – University of Tübingen.

## Greece

- Hellenic Diabetes Federation
- National Diabetes Centre

## Hungary

- Hungarian Diabetes Association
- Association of the Hungarian Diabetic Patients
- Diabetes Association of Kaposvár
- University Medical College – Internal Medicine and Endocrinology
- Ministry of Human Capacities

## Iceland

- Icelandic Diabetes Association

## Ireland

- Diabetes Ireland
- Ministry of Health

## Israel

- Israel Diabetes Association
- Israel Centre for Disease Control, Ministry of Health

## Italy

- Medical Diabetology Association
- Ministry of Health

## Kazakhstan

- Diabetes Association of the Republic of Kazakhstan
- Kazakh National Medical University, Department of Endocrinology

## Kyrgyzstan

- Diabetes Association of Kyrgyzstan
- Ministry of Health

## Latvia

- Latvian Diabetes Association
- Latvian Diabetes Federation
- Latvian Association of Diabetes Nursing
- Ministry of Health

## Lithuania

- Lithuanian Diabetes Association
- Ministry of Health

## Luxembourg

- Luxembourg Diabetes Association
- Ministry of Health

## Malta

- Maltese Diabetes Association
- Diabetes and Endocrine Centre, Ministry of Health

## Netherlands

- Dutch Diabetes Association
- First Association of Diabetes Nursing - EADV
- Ministry of Health, Welfare and Sport

## Norway

- Norwegian Diabetes Association
- Norwegian Directorate of Health

## Poland

- Polish Diabetes Association
- Ministry of Health

## Portugal

- Portuguese Diabetic Association (and their members)
- General Directorate of Health, Ministry of Health

## Republic of Moldova

- Ministry of Health

## Romania

- Romanian Society of Diabetes, Nutrition and Metabolic Diseases
- Romanian Federation of Diabetes, Nutrition and Metabolic Diseases

## Russian Federation

- Russian Diabetes Federation
- Diabetes Association of Moscow

## Serbia

- Diabetes Association of Serbia (and their members)
- Serbian Association for the Study of Diabetes
- Institute of Public Health of Serbia - BATUT

## Slovakia

- Slovakian Diabetes Society
- Association of Diabetic Patients of Slovakia
- DIADOR
- Ministry of Health

## Slovenia

- Slovenian Diabetes Association
- Ministry of Health



## Spain

- Spanish Diabetes Federation
- Murcia Association of Diabetes Care
- Ministry of Health, Social Services and Equality

## Sweden

- Swedish Diabetes Association
- Swedish Association for Nurses in Diabetes
- Ministry of Health and Social Affairs

## Switzerland

- Swiss Diabetes Association
- Swiss Diabetes Nurses Interest Group – GICID
- Federal Ministry of Public Health

## TFYR Macedonia

- Macedonia Diabetes Association
- Ministry of Health

## Turkey

- Turkish Diabetes Association
- Turkish Diabetes Foundation

## Ukraine

- International Diabetes Association of Ukraine

## United Kingdom

- Diabetes UK – England, Scotland and Wales
- The Welsh Government
- NHS England

## Uzbekistan

- Association of Endocrinologists of the Republic of Uzbekistan
- Tashkent Charity Public Association for the Disabled and People with Diabetes

# REFERENCES

1. M Harris PZ. *Classification of diabetes mellitus and other categories of glucose intolerance. International Textbook of Diabetes Mellitus*. Second edition. Chichester: John Wiley and Sons Ltd; 1997. p. 9–23.
2. Reduction in the Incidence of Type 2 Diabetes with Lifestyle Intervention or Metformin. *N Engl J Med* 2002 Feb 7;346(6):393–403.
3. Tuomilehto J, Lindström J, Eriksson JG, Valle TT, Hämäläinen H, Ilanne-Parikka P, et al. Prevention of Type 2 Diabetes Mellitus by Changes in Lifestyle among Subjects with Impaired Glucose Tolerance. *N Engl J Med* 2001 May 3;344(18):1343–50.
4. Pan X-R, Li G-W, Hu Y-H, Wang J-X, Yang W-Y, An Z-X, et al. Effects of Diet and Exercise in Preventing NIDDM in People With Impaired Glucose Tolerance: The Da Qing IGT and Diabetes Study. *Diabetes Care* 1997 Apr 1;20(4):537–44.
5. Holman RR, Paul SK, Bethel MA, Matthews DR, Neil HAW. 10-Year Follow-up of Intensive Glucose Control in Type 2 Diabetes. *N Engl J Med* 2008 Oct 9;359(15):1577–89.
6. IDF. *IDF Diabetes Atlas Sixth Edition* [Internet]. Brussels: IDF; 2013 Dec [cited 2013 Dec 10]. Available from: <http://www.idf.org/diabetesatlas>
7. World Health Organisation. *Prevention of Diabetes Mellitus. Report of a WHO Study Group* [Internet]. 1994. Available from: [http://whqlibdoc.who.int/trs/WHO\\_TRS\\_844.pdf](http://whqlibdoc.who.int/trs/WHO_TRS_844.pdf)
8. American Diabetes Association. Diagnosis and classification of diabetes mellitus (position statement). *Diabetes Care* 2009;32(Supplement 1):S62–S67.
9. Chu SY, Callaghan WM, Kim SY, Schmid CH, Lau J, England LJ, et al. Maternal obesity and risk of gestational diabetes mellitus. *Diabetes Care* 2007 Aug;30(8):2070–6.
10. Bellamy L, Casas J-P, Hingorani AD, Williams D. Type 2 diabetes mellitus after gestational diabetes: a systematic review and meta-analysis. *Lancet* 2009 May 23;373(9677):1773–9.
11. Ma RCW, Chan JCN, Tam WH, Hanson MA, Gluckman PD. Gestational diabetes, maternal obesity, and the NCD burden. *Clin Obstet Gynecol* 2013 Sep;56(3): 633–41.
12. WHO EURO. *Prevention and control of noncommunicable diseases in the European Region A progress report* [Internet]. Copenhagen: WHO Regional Office for Europe; 2013 p. 63. Available from: [http://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0004/235975/Prevention-and-control-of-noncommunicable-diseases-in-the-European-Region-A-progress-report-Eng.pdf](http://www.euro.who.int/__data/assets/pdf_file/0004/235975/Prevention-and-control-of-noncommunicable-diseases-in-the-European-Region-A-progress-report-Eng.pdf)
13. WHO. *WHO highlights need for countries to scale up action on noncommunicable diseases* [Internet]. WHO Media centre. 2014 [cited 2014 Aug 7]. Available from: <http://www.who.int/mediacentre/news/notes/2014/action-on-ncds/en/>
14. Cinek O, Šumník Z, de Beaufort C, Rurik I, Vazeou A, Madácsy L, et al. Heterogeneity in the systems of pediatric diabetes care across the European Union. *Pediatr Diabetes* 2012;13:5–14.
15. Mittman R. *Using Clinical Information Technology in Chronic Disease Care: Expert Workshop Summary*. Using Clinical Information Technology in Chronic Disease Care: Expert Workshop Summary. Oakland: California HealthCare Foundation; 2004.
16. Richesson RL. Data Standards in Diabetes Patient Registries. *J Diabetes Sci Technol* 2011 May 1;5(3):476–85.
17. International Diabetes Federation. *A Guide to National Diabetes Programmes* [Internet]. Brussels: International Diabetes Federation; 2010 [cited 2013 Dec 13]. 117 p. Available from: [http://www.idf.org/webdata/Guide-to-NDP\\_web.pdf](http://www.idf.org/webdata/Guide-to-NDP_web.pdf)
18. National Collaborating Centre for Methods and Tools. *Evidence-informed policy making: The role of monitoring and evaluation* [Internet]. Hamilton, ON: McMaster University; 2011 [cited 2014 Jul 24]. Available from: <http://www.nccmt.ca/registry/view/eng/82.html>

19. IDF Europe, FEND, PCDE, EURADIA. Diabetes. *The Policy Puzzle: Is Europe Making Progress?* 3<sup>rd</sup> Ed. [Internet]. Brussels; 2011 [cited 2013 Dec 18] p. 159. Available from: <http://www.idf.org/sites/default/files/ThePolicyPuzzleBook.pdf>
20. WHO EURO. *Vienna Declaration on Nutrition and Noncommunicable Diseases in the Context of Health 2020* [Internet]. Jul 5, 2013. Available from: [http://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0005/193253/CONSENSUS-Vienna-Declaration-5-July-2013.pdf](http://www.euro.who.int/__data/assets/pdf_file/0005/193253/CONSENSUS-Vienna-Declaration-5-July-2013.pdf)
21. WHO, others. *Global action plan for the prevention and control of noncommunicable diseases 2013–2020* [Internet]. Geneva: WHO; 2013 [cited 2014 Aug 7]. Available from: <http://apps.who.int/iris/handle/10665/94384>
22. Kontis V, Mathers CD, Rehm J, Stevens GA, Shield KD, Bonita R, et al. Contribution of six risk factors to achieving the 25x25 non-communicable disease mortality reduction target: a modelling study. *Lancet* [Internet]. 2014 May [cited 2014 May 9]; Available from: [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(14\)60616-4/abstract](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(14)60616-4/abstract)
23. Psaltopoulou T, Ilias I, Alevizaki M. The Role of Diet and Lifestyle in Primary, Secondary, and Tertiary Diabetes Prevention: A Review of Meta-Analyses. *Rev Diabet Stud RDS* 2010;7(1):26–35.
24. Tuomilehto J, Schwarz P, Lindstrom J. Long-Term Benefits From Lifestyle Interventions for Type 2 Diabetes Prevention. *Diabetes Care* 2011 May;34 (Suppl 2):S210–S214.
25. International Diabetes Federation. *Global Guideline on pregnancy and diabetes* [Internet]. Brussels: International Diabetes Federation; 2009 [cited 2013 Dec 13]. 32 p. Available from: [http://www.idf.org/webdata/docs/Pregnancy\\_EN\\_RTP.pdf](http://www.idf.org/webdata/docs/Pregnancy_EN_RTP.pdf)
26. OECD. *Mean age of mothers at first childbirth* [Internet]. OECD; 2012. Available from: <http://www.oecd.org/els/soc/SF2.3%20Mean%20age%20of%20mother%20at%20first%20childbirth%20-%20updated%20240212.pdf>
27. Sella T, Shalev V, Elchalal U, Chovel-Sella A, Chodick G. Screening for gestational diabetes in the 21<sup>st</sup> century: a population-based cohort study in Israel. *J Matern Fetal Neonatal Med* 2013 Mar;26(4):412–6.
28. WHO. *Priority eye diseases* [Internet]. WHO. [cited 2014 Aug 4]. Available from: <http://www.who.int/blindness/causes/priority/en/index5.html>
29. WHO. *Prevention of blindness from diabetes mellitus* [Internet]. WHO. [cited 2014 Aug 4]. Available from: [http://www.who.int/diabetes/publications/prevention\\_diabetes2006/en/](http://www.who.int/diabetes/publications/prevention_diabetes2006/en/)
30. Maria L Gonzalez Suarez. Diabetic nephropathy: Is it time yet for routine kidney biopsy? *World J Diabetes* 2013;4(6):245–55.
31. WHO. *About diabetes* [Internet]. WHO. [cited 2014 Aug 4]. Available from: [http://www.who.int/diabetes/action\\_online/basics/en/index3.html](http://www.who.int/diabetes/action_online/basics/en/index3.html)
32. Sinead Dawes JE-G, Maureen Wallymahmed. The effectiveness of a “4-step” education programme on HbA1c, weight, hypoglycaemia awareness and quality of life. *Diabetes Net* 2013;17(2):66–71.
33. Saurabh RamBihariLal Shrivastava PSS, Jegadeesh Ramasamy. Role of self-care in management of diabetes mellitus. *J Diabetes Metab Dis* [Internet]. 2013;12(14). Available from: <http://www.jdmdonline.com/content/pdf/2251-6581-12-14.pdf>
34. Marian Carey YD. Supporting successful self-management in diabetes. *Diabetes Net* 2012;14(5):297–306.
35. Diabetes UK, TREND-UK, Royal College of Nursing. *Diabetes Specialist Nurses: Improving Patient Outcomes and Reducing Costs* [Internet]. Diabetes UK, TREND-UK and the Royal College of Nursing; 2014. Available from: <http://www.nursingtimes.net/Journals/2014/03/13/e/x/e/Position-Statement.pdf>
36. The Cochrane Collaboration (Ed). *Specialist nurses in diabetes mellitus (Review)*. Cochrane Database of Systematic Reviews: Reviews. The Cochrane Library. Chichester, UK: John Wiley & Sons, Ltd; 2009.
37. Potera C. Diabetes Nurse Specialists Deliver Care Comparable to Physicians’ at Lower Cost. *Am J Nurs* 2012 Oct;112(10):14.
38. Aiken LH, Sloane DM, Bruyneel L, Van den Heede K, Griffiths P, Busse R, et al. Nurse staffing and education and hospital mortality in nine European countries: a retrospective observational study. *Lancet* [Internet]. 2014 Feb [cited 2014 Feb 28]; Available from: [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(13\)62631-8/fulltext?\\_eventId=login&elsca1=ETOC-LANCET&elsca2=email&elsca3=E24A35F](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(13)62631-8/fulltext?_eventId=login&elsca1=ETOC-LANCET&elsca2=email&elsca3=E24A35F)
39. Tamayo T, Rosenbauer J, Wild SH, Spijkerman AMW, Baan C, Forouhi NG, et al. Diabetes in Europe: An update for 2013 for the IDF Diabetes Atlas. *Diabetes*

- Res Clin Pract* [Internet]. 2013 Nov [cited 2013 Dec 10]; Available from: <http://linkinghub.elsevier.com/retrieve/pii/S0168822713003902>
40. Buckley BS, Harreiter J, Damm P, Corcoy R, Chico A, Simmons D, et al. Gestational diabetes mellitus in Europe: prevalence, current screening practice and barriers to screening. A review. *Diabet Med* 2012;29(7):844–54.
  41. Nielsen KK, Kapur A, Damm P, de Courten M, Bygbjerg IC. From screening to postpartum follow-up - the determinants and barriers for gestational diabetes mellitus (GDM) services, a systematic review. *BMC Pregnancy Childbirth* 2014 Jan 22;14:41.
  42. Negrato C, Gomes M. Historical facts of screening and diagnosing diabetes in pregnancy. *Diabetol Metab Syndr* 2013;5(1):22.
  43. *Screening for Diabetic Retinopathy in Europe – Progress since 2005. Screening for Diabetic Retinopathy in Europe – Progress since 2005.* Satellite meeting to EASDec, Gdansk 2011 [Internet]. Gdansk; 2011 [cited 2014 Jun 30]. Available from: <http://webcache.googleusercontent.com/search?q=cache:D5QNEcR8ONQJ:www.drscreening2005.org.uk/Download%2520Documents/ConferenceReportGdanskFinalSPH.doc+&cd=1&hl=en&ct=clnk&gl=be>
  44. Kanavos P, van den Aardweg S, Schurer W. Diabetes expenditure, burden of disease and management in 5 EU countries. *LSE Health Soc Care* [Internet]. 2012 [cited 2014 Feb 21]; Available from: [http://eprints.lse.ac.uk/54896/1/\\_\\_libfile\\_REPOSITORY\\_Content\\_LSE%20Health%20and%20Social%20Care\\_Jan%202012\\_LSEDiabetesReport26Jan2012.pdf](http://eprints.lse.ac.uk/54896/1/__libfile_REPOSITORY_Content_LSE%20Health%20and%20Social%20Care_Jan%202012_LSEDiabetesReport26Jan2012.pdf)
  45. Dr Nune Makarova DDB, Dr Ivdity Chikovani. Health in Times of Transition Ukraine. *Health Times Transit Trends Popul Health Health Policies CIS Ctries* [Internet]. 2013 Apr; Available from: [www.hitt-cis.net](http://www.hitt-cis.net)
  46. Ivanuto O, Balabanova D, Chikovani I. Diabetes care in times of transition: Belarus. *Health Times Transit Trends Popul Health Health Policies CIS Ctries* [Internet]. 2013;April 2013. Available from: [www.hitt-cis.net](http://www.hitt-cis.net)
  47. Makarova N, Ivdity Chikovani I. *Health in Times of Transition.* HiTT [Internet]. 2013;April 2013[2013]. Available from: [www.hitt-cis.net](http://www.hitt-cis.net)
  48. Pasko N. Prevalence of microalbuminuria and risk factor analysis in type 2 diabetes patients in Albania: the need for accurate and early diagnosis of diabetic nephropathy. *Hippokratia* 2013;17(4):337–41.
  49. Petrosyan V, Martirosyan H, Balabanova D. Diabetes care in times of transition: Armenia. *Health Times Transit Trends Popul Health Health Policies CIS Ctries* [Internet]. 2013;April 2013. Available from: [www.hitt-cis.net](http://www.hitt-cis.net)
  50. WHO EURO. *Armenia: Areas of work* [Internet]. WHO Europe. [cited 2014 Jul 10]. Available from: <http://www.euro.who.int/en/countries/armenia/areas-of-work>
  51. Ministry of Health of Armenia. *News: Discussions on Armenia and WHO joint projects* [Internet]. 2014 [cited 2014 Jul 10]. Available from: <http://www.moh.am/?section=news/open&id=143&nid=2616>
  52. Martirosyan H, Petrosyan V, Crape B, Melkomian DM, Koshkakarayan M, Sahakyan Y, et al. *Health in Times of Transition Rapid Appraisal of Diabetes Care in Armenia Qualitative Research* [Internet]. Yerevan: American University of Armenia; London School of Hygiene and Tropical Medicine; Curatio International Foundation; 2012 [cited 2014 Mar 13] p. 88. Available from: [http://auachsr.com/UserFiles/File/new%20/CHSR\\_Reports/RA\\_Diabetes\\_report\\_CHSR\\_AUA\\_Armenia\\_May\\_2012.pdf](http://auachsr.com/UserFiles/File/new%20/CHSR_Reports/RA_Diabetes_report_CHSR_AUA_Armenia_May_2012.pdf)
  53. Bundesministerium für Gesundheit. *Zivilisationskrankheit Diabetes: Ausprägungen – Lösungsansätze – Herausforderungen Österreichischer Diabetesbericht 2013* [Internet]. Vienna: Bundesministerium für Gesundheit, Österreich; 2013 p. 86. Available from: [www.bmg.gv.at/Publikationen](http://www.bmg.gv.at/Publikationen)
  54. Bundesministerium für Gesundheit und Frauen. *Österreichischer Diabetesplan* [Internet]. Vienna: Bundesministerium für Gesundheit und Frauen, Österreich; 2006 [cited 2014 Jun 27] p. 28. Available from: [http://www.bmg.gv.at/cms/home/attachments/5/7/7/CH1079/CMS1123242283163/cms1196777500796\\_diabetesplan.pdf](http://www.bmg.gv.at/cms/home/attachments/5/7/7/CH1079/CMS1123242283163/cms1196777500796_diabetesplan.pdf)
  55. Elissen A, Nolte E, Knai C, Brunn M, Chevreul K, Conklin A, et al. Is Europe putting theory into practice? A qualitative study of the level of self-management support in chronic care management approaches. *BMC Health Serv Res* 2013 Mar 26;13(1):117.
  56. Schang L, Czypionka T, Thomson S. *Strengthening care coordination: a comparative analysis of reform implementation in Austria and Germany, with options for Austria* [Internet]. London: LSE Health; 2013 Apr [cited 2014 Mar 13] p. 85. Available from:

- [http://www.hauptverband.at/mediaDB/977281\\_LSE\\_IHS\\_implementation\\_report\\_FINAL\\_080413.pdf](http://www.hauptverband.at/mediaDB/977281_LSE_IHS_implementation_report_FINAL_080413.pdf)
57. WHO. *NCD Country Profiles* [Internet]. Geneva: WHO; 2011 [cited 2014 Jun 30]. Available from: <http://www.who.int/nmh/countries/en/#B>
  58. Ministry of Health of the Republic of Belarus. Press release on the conduct of the Republican campaign “Early detection of diabetes” [Internet]. Press releases. 2013 [cited 2014 Jul 1]. Available from: [http://minzdrav.gov.by/ru/static/press-release/i\\_708.html](http://minzdrav.gov.by/ru/static/press-release/i_708.html)
  59. Gruber P. Les patients diabétiques sont des malades chroniques (presque) comme les autres... *La Revue de l'ABD* 2014 Jun;57(3):6–8.
  60. Stone MA, Wilkinson JC, Charpentier G, Clochard N, Grassi G, Lindblad U, et al. Evaluation and comparison of guidelines for the management of people with type 2 diabetes from eight European countries. *Diabetes Res Clin Pract* 2010 Feb;87(2):252–60.
  61. Bulgarian Council of Ministers. National program for prevention of chronic non-communicable diseases 2014–2020. *Decision* 2013 Dec 9;538.
  62. Croatian Parliament. *Resolution about diabetes* [Internet]. 70/2011 Jun 17, 2011. Available from: <http://narodne-novine.nn.hr/default.aspx>
  63. Cinek O, Kulich M, Sumnik Z. The incidence of type 1 diabetes in young Czech children stopped rising. *Pediatr Diabetes* 2012 Nov;13(7):559–63.
  64. Thomsen RW, Friberg S, Nielsen JS, Schroll H, Johnsen SP. The Danish Centre for Strategic Research in Type 2 Diabetes (DD2): organization of diabetes care in Denmark and supplementary data sources for data collection among DD2 study participants. *Clin Epidemiol* 2012 Sep 21;4(Suppl 1):15–9.
  65. Ministeriet for sundhed og forebyggelse. *Healthier life for all. National targets for the Danish health the next 10 years* [Internet]. København: Ministeriet for sundhed og forebyggelse; 2013 p. 25. Report No.: 14:11. Available from: <http://www.sum.dk/Aktuelt/Publikationer/Nationale-maal-jan-2014.aspx>
  66. IDF Europe. *Access to Quality Medicines and Medical Devices for Diabetes Care in Europe* [Internet]. Brussels: IDF Europe; 2013 p. 171. Available from: <http://www.idf.org/regions/EUR/accesstodiabetescare>
  67. Finnish Diabetes Association. *Finnish Diabetes Association - One Life projects* [Internet]. 2012 [cited 2014 Mar 11]. Available from: [http://www.diabetes.fi/en/finnish\\_diabetes\\_association/one\\_life\\_projects](http://www.diabetes.fi/en/finnish_diabetes_association/one_life_projects)
  68. Chevreur K, Berg Brigham K, Bouche C. The burden and treatment of diabetes in France. *Glob Health* 2014 Feb 20;10:6.
  69. Quelles orientations pour la loi de santé ? [Internet]. Portail du Gouvernement de la République française. 2014 [cited 2014 Jul 3]. Available from: <http://www.gouvernement.fr/gouvernement/quelles-orientations-pour-la-loi-de-sante>
  70. Deccache A, van Ballekom K. From patient compliance to empowerment and consumer’s choice: Evolution or regression? An overview of patient education in French speaking European countries. *Patient Educ Couns* 2010 Mar;78(3):282–7.
  71. Balabanova D, McKee M, Koroleva N, Chikovani I, Gogvadze K, Kobaladze T, et al. Navigating the health system: diabetes care in Georgia. *Health Policy Plan* 2009 Jan 1;24(1):46–54.
  72. KBV. *Qualitätsbericht Ausgabe 2012* [Internet]. Berlin: KBV; 2012 Dec p. 132. Available from: [http://www.kbv.de/media/sp/KBV\\_Qualitaetsbericht\\_2012.pdf](http://www.kbv.de/media/sp/KBV_Qualitaetsbericht_2012.pdf)
  73. Pommer W. Prevalence of nephropathy in the German diabetes population—Is early referral to nephrological care a realistic demand today? *NDT Plus* 2008 Oct 1;1(suppl 4):iv2–iv5.
  74. WHO. *Global status report on noncommunicable diseases 2010* [Internet]. WHO. Geneva; 2011 [cited 2014 Jan 15]. 76 p. Available from: [http://www.who.int/nmh/publications/ncd\\_report2010/en/](http://www.who.int/nmh/publications/ncd_report2010/en/)
  75. HSE. *National Clinical Programme for Diabetes* [Internet]. [cited 2014 Feb 21]. Available from: <http://www.hse.ie/diabetesprogramme/>
  76. Retinopathy screening uptake at 40%. *The Medical Independent* [Internet]. [cited 2014 Sep 1]. Available from: [http://www.medicalindependent.ie/49194/retinopathy\\_screening\\_uptake\\_at\\_40](http://www.medicalindependent.ie/49194/retinopathy_screening_uptake_at_40)
  77. Piano Nazionale Diabete. Piano Nazionale Diabete. Sul territorio. *Diabete Italia* [Internet]. [cited 2014 Jul 8]. Available from: <http://www.diabeteitalia.it/sul-territorio/piano-nazionale-diabete/piano-nazionale-diabete.aspx>
  78. Katsaga A, Kulzhanov M, Karanikolos M, Rechel B. Kazakhstan: Health System Review 2012. *Health*

- Syst Transit* [Internet]. 2012;14(4). Available from: [http://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0007/161557/e96451.pdf?ua=1](http://www.euro.who.int/__data/assets/pdf_file/0007/161557/e96451.pdf?ua=1)
79. Beran D, Abdraimova A, Akkazieva B, McKee M, Balabanova D, Yudkin JS. Diabetes in Kyrgyzstan: changes between 2002 and 2009: Diabetes in Kyrgyzstan between 2002 and 2009. *Int J Health Plann Manage* 2013 Apr;28(2):e121–e137.
  80. Ministry of Health of the Republic of Latvia. *Public Health Strategy 2011-2017* [Internet]. Available from: [http://www.vm.gov.lv/images/userfiles/public\\_health\\_strategy\\_2011\\_2017.pdf](http://www.vm.gov.lv/images/userfiles/public_health_strategy_2011_2017.pdf)
  81. Mitenbergs U, Taube M, Misins J, Mikitis E, Martinsons A, Rurane A, et al. Latvia Health system review. *Health Syst Transit* [Internet]. 2012 [cited 2014 Jul 18];14(8). Available from: <http://www.euro.who.int/en/about-us/partners/observatory/health-systems-in-transition-hit-series/countries-and-subregions/latvia-hit-2012>
  82. I. Rasa VP, I.Dzivite UG, G.Freimane AL, A.Lurie IP, A.Valtere L, LEA. 4.I.RASA, V.PIRAGS, I.Dzivite, U. Gailisa, G.Freimane, A.Lejnieks, A.Lurie, I.Pavlina, A.Valtere, LDA, LEA, Riga, 2007. Available from: <http://www.endokrinologi.lv/index.php/informacija-profesionaliem/deriga-informacija>.
  83. Rudaitis R. Approved Lithuanian Health Programme 2014-2025 [Internet]. Lithuanian Ministry of Health. [cited 2014 Jul 10]. Available from: <http://www.sam.lt/go.php/lit/Patvirtinta-Lietuvos-sveikatos-20142025-meprograma/1>
  84. Gouvernement du Grand-Duché du Luxembourg. *Programme gouvernemental* [Internet]. 2013 [cited 2014 May 13]. Available from: <http://www.gouvernement.lu/3322796/Programme-gouvernemental.pdf>
  85. Borg A. No mention of diabetes policy in budget, minister cancels event. *The Malta Independent* [Internet]. 2013 Nov 14 [cited 2014 Feb 21]; Available from: <http://www.independent.com.mt/articles/2013-11-14/news/diabetes-plan-promised-but-will-it-be-delivered-3184132096/>
  86. Ministry for Health. *Protocol for Shared Care Diabetes in Malta* [Internet]. [cited 2014 Feb 21]. Available from: [https://ehealth.gov.mt/HealthPortal/health\\_institutions/primary\\_healthcare/diabetes\\_clinic/protocol\\_for\\_shared\\_care\\_diabetes\\_in\\_malta.aspx](https://ehealth.gov.mt/HealthPortal/health_institutions/primary_healthcare/diabetes_clinic/protocol_for_shared_care_diabetes_in_malta.aspx)
  87. Savona-Ventura C. *Guidelines: Screening for Gestational Diabetes* [Internet]. Available from: [http://staff.um.edu.mt/csav1/dpjc\\_guidelines/Screening.pdf](http://staff.um.edu.mt/csav1/dpjc_guidelines/Screening.pdf)
  88. Dutch Diabetes Federation. *National Diabetes Action Program 2009-2013* [Internet]. Amersfoort; 2009 Feb [cited 2014 Feb 24] p. 5. Available from: [http://www.actieprogrammadiabetes.nl/component/docman/doc\\_download/4-nad-summary](http://www.actieprogrammadiabetes.nl/component/docman/doc_download/4-nad-summary)
  89. Jozef B. Lewoc SS, et al. A Case Study: Risks and Challenges for Training Nurses in Diabetes Problems. *J Eng* 2012 Jun;2(6):1401–8.
  90. Directorate-General of Health, Ministry of Health. *National Programme for the Prevention and Control of Diabetes* [Internet]. Lisbon: Portugal Ministry of Health; 2008 [cited 2014 Feb 24]. Available from: <http://www.dgs.pt/upload/membro.id/ficheiros/i013261.pdf>
  91. Bivol S. NCDs, Their Burden of Disease and Control Strategies in Moldova [Internet]. PowerPoint presented at: Swiss TPH Spring symposium; 2013 Oct 4 [cited 2014 Feb 24]; Basel. Available from: [http://www.swisstph.ch/fileadmin/user\\_upload/Pdfs/Symposium/Spring\\_2013/Bivol\\_\\_Stela.pdf](http://www.swisstph.ch/fileadmin/user_upload/Pdfs/Symposium/Spring_2013/Bivol__Stela.pdf)
  92. Olga Danii DDB, Dr Ivdity Chikovani. *Health in Times of Transition*. 2013;April 2013. Available from: [www.hitt-cis.net](http://www.hitt-cis.net)
  93. Codreanu I, Sali V, Gaibu S, Suvica L, Popa S, Perico N, et al. Prevalence of Hypertension and Diabetes and Coexistence of Chronic Kidney Disease and Cardiovascular Risk in the Population of the Republic of Moldova. *Int J Hypertens* 2012;2012:1–8.
  94. Iliescu ML, Anton DT. An indirect evaluation of the National program of diabetes mellitus - study case of Romania. *Rev Med Chir Soc Med Nat* 2013;117(2):483–7.
  95. Donicova V, Broz J, Sorin I. Health Care Provision for People with Diabetes and Postgraduate Training of Diabetes Specialists in Eastern European Countries. *J Diabetes Sci Technol* 2011 Sep 1;5(5):1124–36.
  96. Lachat C, Otchere S, Roberfroid D, Abdulai A, Seret FMA, Milesevic J, et al. Diet and Physical Activity for the Prevention of Noncommunicable Diseases in Low- and Middle-Income Countries: A Systematic Policy Review. *PLoS Med* 2013;10(6):e1001465.
  97. Socialdepartementet. Handlingsplan 2014 till Nationell strategi för att förebygga och behandla kroniska sjukdomar [Internet]. Regeringskansliet.

- 2014 [cited 2014 Jul 10]. Available from: <http://www.regeringen.se/sb/d/108/a/241434>
98. Keller HR. *Rapport QualiCCare* [Internet]. Berne: Office fédéral de la santé publique; 2013 Mar. Available from: <http://www.bag.admin.ch/themen/medizin/00683/index.html?lang=fr>
99. Tatar M. Management of diabetes and diabetes policies in Turkey. *Glob Health* 2013;9(1):16.
100. Atun R, Aydın S, Chakraborty S, Sümer S, Aran M, Gürol I, et al. Universal health coverage in Turkey: enhancement of equity. *Lancet* 2013 Jul;382(9886):65–99.
101. Cetin EN, Zencir M, Fenkçi S, Akın F, Yıldırım C. Assessment of awareness of diabetic retinopathy and utilization of eye care services among Turkish diabetic patients. *Prim Care Diabetes* 2013 Dec;7(4):297–302.
103. Black L-A. *Diabetes: Policies, Service Commissioning and Costs* [Internet]. Belfast: Northern Ireland Assembly; 2012 Jun [cited 2014 Feb 14]. Report No.: NIAR 334 - 12. Available from: <http://www.niassembly.gov.uk/Documents/RaISe/Publications/2012/health/14812.pdf>
104. Diabetes UK. *State of the Nation 2013* [Internet]. London; 2013 [cited 2014 Feb 14] p. 31. Available from: <http://www.diabetes.org.uk/Documents/-Reports/State-of-the-Nation-2012.pdf>
105. DAFNE Home [Internet]. *DAFNE*. [cited 2014 Mar 25]. Available from: <http://www.dafne.uk.com/index.html>
106. DESMOND. *Diabetes Education and Self-Management for Ongoing and Diagnosed*. [Internet]. [cited 2014 Mar 25]. Available from: <http://www.desmond-project.org.uk/>
107. TREND-UK. *An Integrated Career and Competency Framework for Diabetes Nursing*. London: TREND-UK; 2011 p. 35.
108. WHO EURO. *Prevention and control of noncommunicable diseases in the European Region: A progress report* [Internet]. Copenhagen: WHO Regional Office for Europe; 2013 [cited 2014 Jan 27]. Available from: [http://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0004/235975/Prevention-and-control-of-noncommunicable-diseases-in-the-European-Region-A-progress-report-Eng.pdf](http://www.euro.who.int/__data/assets/pdf_file/0004/235975/Prevention-and-control-of-noncommunicable-diseases-in-the-European-Region-A-progress-report-Eng.pdf)
109. UN General Assembly. *Political Declaration of the High-level Meeting of the General Assembly on the Prevention and Control of Non-communicable Diseases* [Internet]. A /RES/66/2 Jan 27, 2012 p. 13. Available from: [http://www.who.int/nmh/events/un\\_ncd\\_summit2011/political\\_declaration\\_en.pdf](http://www.who.int/nmh/events/un_ncd_summit2011/political_declaration_en.pdf)
110. Jörgens V, Grüsser M, Schürmann P, Müller UA. Fate of abstracts submitted to the 2004 EASD Annual Meeting in Munich. *Diabetologia* 2014 Sep 1;57(9):1997–9.

# FURTHER RESOURCES



**International  
Diabetes Federation  
Europe**

MORE INFORMATION ON  
THE INTERNATIONAL DIABETES  
FEDERATION – EUROPEAN REGION  
(IDF EUROPE)

**[www.idf-europe.org](http://www.idf-europe.org)**

Policy Puzzle website  
and interactive tool also  
available on **[www.idf-europe.org](http://www.idf-europe.org)**

**PCDE**  
primary care diabetes europe

MORE INFORMATION ON  
PRIMARY CARE  
DIABETES EUROPE (PCDE)

**[www.pcdeurope.org](http://www.pcdeurope.org)**

**FEND**  
Foundation of European Nurses in Diabetes

MORE INFORMATION ON THE FOUNDATION  
OF EUROPEAN NURSES IN DIABETES (FEND)

**[www.fend.org](http://www.fend.org)**

FEND ENDCUP

**[www.fend.org/  
projects/fend-endcup](http://www.fend.org/projects/fend-endcup)**



**EURADIA**  
Alliance for European Diabetes Research

MORE INFORMATION ON  
THE ALLIANCE FOR EUROPEAN  
DIABETES RESEARCH (EURADIA)

[www.euradia.org](http://www.euradia.org)  
[www.EURADIA.org/videos](http://www.EURADIA.org/videos)  
[www.DIAMAP.eu](http://www.DIAMAP.eu)

OTHER RESOURCES

[www.CardioScape.eu](http://www.CardioScape.eu)  
[www.ncd-map.eu](http://www.ncd-map.eu)  
[www.interconnect-diabetes.eu](http://www.interconnect-diabetes.eu)  
[www.EASD.org](http://www.EASD.org)  
[http://ec.europa.eu/research/  
health/medical-research/  
diabetes-and-obesity/  
projectsfp7\\_en.html](http://ec.europa.eu/research/health/medical-research/diabetes-and-obesity/projectsfp7_en.html)

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# NOTES

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