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## KEY MESSAGES

- The rising burden of diabetes poses important public health challenges to health systems today; this challenge has been recognized at the global level, with diabetes featuring high on national and international agendas.
- Countries in Europe have made progress towards developing a systematic policy response to the diabetes burden but overall the investment in and implementation of comprehensive strategies for the prevention and treatment of diabetes has varied.
- Drawing on a mapping of national diabetes plans (NDPs) in Europe that was undertaken as part of the EU Joint Action on Chronic Diseases and Promoting Healthy Ageing across the Life Cycle (JA-CHRODIS) this policy brief identified a range of factors that appear to facilitate the development, implementation and sustainability of national diabetes plans.
- Identified factors are: national (or regional) leadership, multiple stakeholder involvement, patient representation in plan development and implementation, providing adequate resourcing for implementation of the NDP, retaining flexibility in NDPs, striking a balance between centrally defined requirements and regional autonomy, and learning from experience through monitoring and evaluation as well as transnational learning can help inform NDP development and implementation.
- The key challenge for the future is ensuring that NDPs can be monitored and evaluated by building up capacity in information systems so that the health outcomes of such interventions can be adequately measured.



## EXECUTIVE SUMMARY

### What is the challenge?

Diabetes is an increasingly common health condition which can lead to disabling and potentially fatal health complications. In high-income countries it is a leading cause of cardiovascular disease, blindness, kidney failure and lower-limb amputation. Globally, the number of people living with diabetes has doubled in the past 20 years and it constitutes an important part of the non-communicable disease burden that health systems now face.

In recognition of this challenge, many countries in Europe have introduced national plans addressing diabetes specifically (national diabetes plans, NDPs) or as part of broader non-communicable disease (NCD) strategies. This policy brief sets out to identify the key enablers and barriers to their development, implementation and sustainability to enable the exchange of good practices. Data on national diabetes plans in 22 European countries that was collected as part of JA-CHRODIS formed the basis for this piece.

### What is the evidence?

The majority (13 out of 22) of countries surveyed currently have a formal national diabetes plan in place. Of those that did not, two had concluded a previous NDP and had not yet developed a follow-up and three referred to diabetes disease management programmes and other measures in place.

National diabetes plans typically take a broad approach, capturing prevention and treatment and seeking to place the patient at the centre. Most of the NDPs focused on diabetes broadly, covering type 1 and 2 diabetes, along with gestational diabetes. Most countries with a dedicated NDP in place target the whole population. NDPs typically include prevention, early diagnosis, routine care and services, and patient education in all countries although respondents in some countries noted that specific aspects might be covered under other national-level plans or strategies.

Plans or strategies addressing healthy public policies were reported to be in place for all but one country. Identifying high-risk individuals and preventing the onset of diabetes in those at risk was a common aspect of NDPs across the countries for which data were collected, although about one third of countries that did report having an NDP in place did not include early detection of diabetes among groups at risk. Workplace interventions for individuals at risk did not typically form a core part of NDPs and community awareness campaigning was also not universally included in NDPs or other plans.

Half the countries reported including a human resources strategy as part of the NDP; where the NDP did not explicitly address human resources, this was often, although not always, covered under other strategies, for example targeting chronic diseases more broadly. A dedicated human resources strategy can be seen as an important element given the crucial role of frontline staff in the implementation of an NDP.

NDPs usually included some form of monitoring and surveillance, and this appeared to be mostly focused on

diabetes prevalence and incidence, access to services and clinical outcomes. Most countries were reported to have some form of system in place for the collection of data on diabetes. The monitoring of costs associated with plan implementation appeared to be less frequently used, as was the monitoring of community awareness. Most countries were reported to have an evaluation strategy for the NDP in place. Most countries noted that the development of the plan was informed by some form of situation or needs assessment, and most also reported that there was some form of baseline data available.

There is a range of factors appearing to facilitate the development, implementation and sustainability of NDPs. While intersectoral action was seen to be desirable, NDPs tend to be developed by ministries of health, rather than through intersectoral action and not all ministries of health have the requisite resources, skills or influence to make the case to other sectors that they should be involved in diabetes or wider NCD prevention work. For implementation, strong support from lead clinicians and managers was required, but high-level political commitment to NCDs as a priority health issue was key.

Multiple stakeholder involvement similarly facilitated the development, implementation and sustainability of NDPs, particularly through patient representation. The findings indicated that diabetes organizations and patient groups played a central role in developing NDPs and were key to the successful adoption and even implementation of the plans. Potentially, this single disease focus made these groups more effective in advocating for change thereby facilitating greater influence over the policy process.

Many countries particularly highlighted the need for dedicated resources to build capacity. Building capacity in the health workforce did not necessarily mean hiring new staff or developing new posts, but could entail specific training for existing staff. Building technological capacity was needed in some countries in order to develop tools such as diabetes registers.

### What are the findings?

This policy brief identified a range of factors that appear to facilitate the development, implementation and sustainability of national diabetes plans including: leadership and management, multiple stakeholder involvement, patient representation in plan development and implementation, and dedicating adequate resources for implementation.

In more decentralized countries with regional diabetes plans, local governments were also found to be implementing changes to improve the prevention and treatment of diabetes. Indeed, where the health system is organized on a regional basis, NDPs provided the overall framework for action, but regions had considerable flexibility in how the NDP was implemented locally.

Flexibility in the NDPs allowed for change over time so it could remain relevant despite the rapid pace of change in medical technologies and changes in the political environment, whereby a change of government could entail a change of policy direction in this area.

Lastly, learning from experience through monitoring and evaluation as well as transnational learning was found to help inform NDP development and implementation. Having accurate data forms an important component of a successful national strategy to enable assessment of the 'true' burden of diabetes and to monitor the performance of care processes and so inform service development and policy development more widely.

## Conclusions

Making diabetes or NCDs more broadly a political priority was critical to the development and implementation of NDPs. Diabetes can be taken to act as the tracer condition to demonstrate the importance of the holistic approaches to the prevention and treatment of NCDs. Diabetes can demonstrate the potential for intersectoral working, which allows countries to gain valuable experience which can then be applied to NCDs more broadly.

## MAIN BRIEF

### Introduction

Diabetes occurs as a consequence of the human body being unable to produce sufficient amounts of the hormone insulin, which regulates blood glucose, or to use insulin effectively.<sup>1</sup> People with diabetes are unable to metabolize glucose appropriately and as a result blood glucose levels remain above normal threshold levels and over time cause blood vessel damage. This can lead to long-term damage and disabling and potentially fatal health complications. In high-income countries diabetes is a leading cause of cardiovascular disease, blindness, kidney failure and lower-limb amputation.

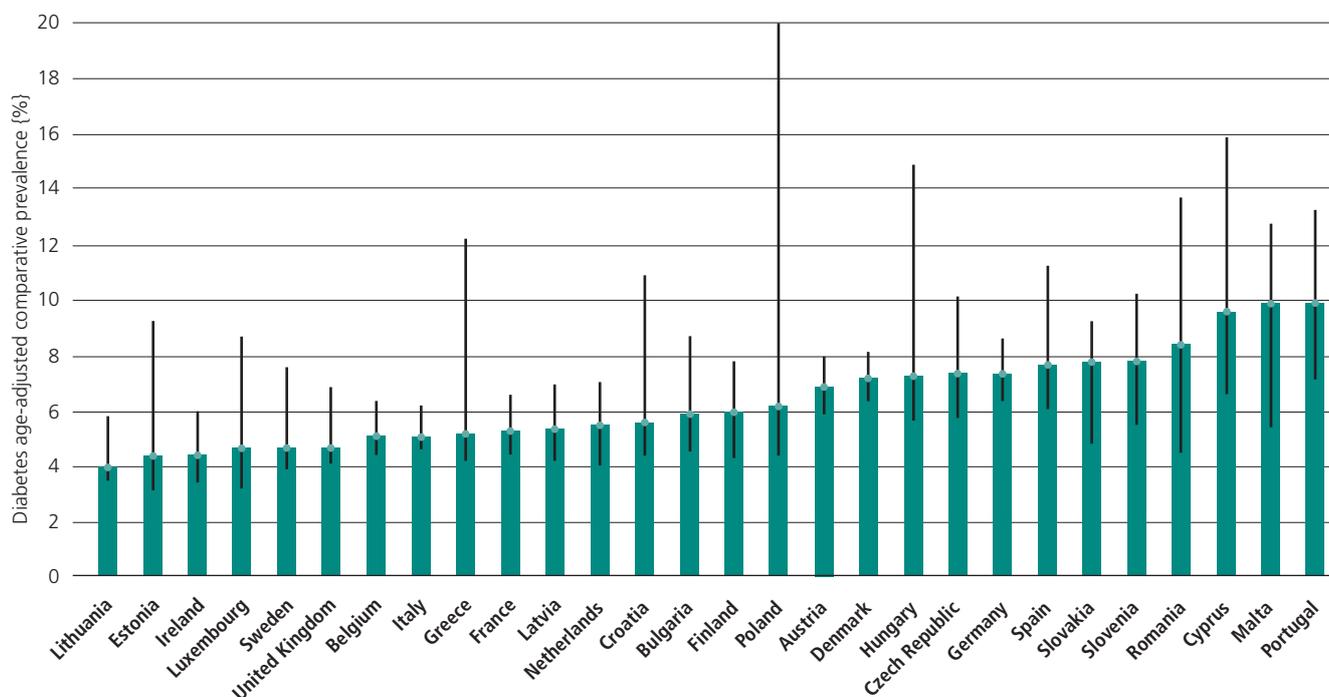
The most common form of diabetes is type 2, which typically occurs in adults, although it is increasingly seen in young people, including children.<sup>2</sup> Type 1 diabetes typically occurs in children or young people and the prevalence of type 1 diabetes is also increasing, although at a much lower level than type 2. The third main type of diabetes is gestational diabetes, which occurs because the action of insulin is impaired during pregnancy. Gestational diabetes is becoming increasingly common against rising levels of overweight and obesity as key risk factors.<sup>3</sup>

Globally, the number of people with diabetes has doubled during the past 20 years, making it one of the most important public health challenges facing health systems

today. The most recent estimates by the International Diabetes Federation suggest that in 2015 there were 415 million people living with diabetes globally.<sup>1</sup> This estimate is similar to that previously forecast for 2030, suggesting that the burden of diabetes has consistently been underestimated during the past two decades.<sup>2</sup> It is currently projected that by 2040 the number of people with diabetes will have risen to 642 million as the population ages.<sup>1</sup> In the absence of comparable national data sources or diabetes registers it is difficult to reach a precise understanding of the country-specific diabetes burden.<sup>4</sup> Figure 1 shows the estimated diabetes comparative prevalence for countries in the European Union in 2015, ranging from around 4.0 to 4.5 per cent in Lithuania, Estonia and Iceland to just under 10 per cent in Cyprus, Malta and Portugal.<sup>1</sup>

Diabetes is associated with a high individual, social and economic burden. The global expenditure on diabetes was estimated to be €284 billion in 2010, and this expenditure has been projected to rise to €370 billion in 2030.<sup>5</sup> However, according to more recent estimates by the International Diabetes Federation, global expenditure on diabetes has already surpassed this projected estimate, with figures for 2015 placing spending at €508 billion.<sup>1</sup> The estimated average diabetes-associated expenditure per adult person with diabetes in the European Union in 2015 was placed at just over €2,640, with estimates ranging from €860 in Romania and €1,060 in Bulgaria to around €5,150 in the Netherlands and €6,220 in Luxembourg.<sup>1</sup>

**Figure 1. Estimated adult (aged 20–79 years) diabetes comparative prevalence (%) in 28 EU Member States (with uncertainty range), 2015**



Source: International Diabetes Federation (2015)<sup>1</sup>

Aspects of the pathophysiology and causal pathways for type 1 and type 2 diabetes remain inadequately understood, which is challenging the effective treatment of type 2 diabetes in particular.<sup>6</sup> It is clear that those with type 1 diabetes cannot survive without a regular supply of insulin, while type 2 diabetes is largely preventable and complications can be avoided or delayed through a combination of lifestyle changes, medications or insulin therapy, depending on the status of the condition and the stage of the disease.<sup>7</sup> Effective treatment reduces the risk of disability or fatal complications and its optimal management requires coordinated inputs from a wide range of health professionals, access to essential medicines and monitoring, and, ideally, a system that promotes patient empowerment and well coordinated care. A health service that is unable to integrate these elements for the management of diabetes is unlikely to be able to meet the needs of people with diabetes and other chronic conditions.

The challenge posed by the changing disease burden has been recognized globally, with diabetes featuring high on national and international agendas. This is exemplified by the renewed UN commitment in 2014 to address noncommunicable diseases as a matter of priority in member states.<sup>8</sup> In Europe the adoption by the WHO European Region of an action plan for implementation of the European Strategy for the Prevention and Control of Noncommunicable Diseases 2012–2016<sup>9</sup> and the Health 2020 European policy framework and strategy for the 21st century,<sup>10</sup> the 2010 Council conclusions on Innovative approaches for chronic diseases in public health and healthcare systems<sup>11</sup> and ensuing reflection process on chronic diseases,<sup>12</sup> the 2012 European Parliament resolution on addressing the EU diabetes epidemic<sup>13</sup> and, more recently, the 2014 EU summit on chronic diseases<sup>14</sup> all demonstrate this recognition.

At national level countries in Europe have made progress towards developing a systematic policy response to the diabetes burden. Overall, however, the investment in and implementation of comprehensive strategies for the prevention and treatment of diabetes has varied, with differences in the relative priorities that countries place on research, prevention, treatment, management and self-management. A recent assessment by the European Coalition for Diabetes reported in its 4<sup>th</sup> edition of 'Diabetes in Europe: Policy Puzzle' that, in 2014, 18 out of 28 EU Member States had a national plan in place, either addressing diabetes specifically or as part of a policy response targeting chronic disease more broadly, with another four countries in the process of developing such a plan.<sup>3</sup> Among the key challenges identified by the audit was the need for countries to move towards a more comprehensive, multisectoral approach to diabetes, and for putting in place effective mechanisms for the implementation, monitoring and evaluation of national diabetes plans.<sup>3</sup>

Against this background there is a need to better understand the key factors that contribute to the successful implementation of national diabetes plans, as well as exploring in more detail the barriers countries are facing towards the development of effective monitoring and evaluation strategies to enable assessment of achievement of the plans' goals and objectives. A better understanding of the key enablers and barriers to plan development and implementation will be of key importance to support countries' efforts to build a successful response to diabetes at the national level and to ensure that high-level commitments towards the prevention and control of diabetes and, by implication, chronic diseases more broadly, are being translated into action, and so effectively address the rising burden of diabetes in Europe and elsewhere.

Drawing on a mapping of national diabetes plans (NDPs) in Europe that was undertaken as part of the EU Joint Action on Chronic Diseases and Promoting Healthy Ageing across the Life Cycle (JA-CHRODIS)<sup>15</sup> (Box 1), this policy brief seeks to contribute to closing this gap.

#### Box 1. Joint Action on Chronic Diseases and Healthy Ageing across the Life Cycle (JA-CHRODIS)

The Joint Action on Chronic Diseases and Healthy Ageing across the Life Cycle (JA-CHRODIS) was set up under the second EU Health Programme.<sup>16</sup> It is the largest Joint Action co-financed under the EU Health Programme to date, bringing together seventy organizations, representing competent authorities from across Europe. The Joint Action focus is on three areas: health promotion and primary prevention, multimorbidity and diabetes as a case study. The underlying concept of the JA-CHRODIS is to map state-of-the-art practices, interventions, care models and policies as a basis to support cross-country learning by promoting the exchange and transfer of good practices. Diabetes is used as a case study to analyse countries' approaches to providing care for people at high risk of developing type 2 diabetes as well as diabetes management and care, health promotion strategies, education of persons with diabetes and training of health care professionals.

For the purposes of the EU Joint Action on Chronic Diseases and Promoting Healthy Ageing across the Life Cycle (JA-CHRODIS) project a **National Diabetes Plan** was defined as:

- (1) any formal strategy for improving diabetes policy, services and outcomes, and that encompasses structured and integrated or linked activities, which are planned and coordinated nationally and implemented at the national, state or district, and local levels; and
- (2) a systematic and coordinated approach to improving the organization, accessibility, and quality of diabetes prevention and care, which is usually manifested as a comprehensive policy, advocacy and action.

This definition is based on the 'Guide to National Diabetes Programmes' developed by the International Diabetes Federation.<sup>17</sup> We use the term 'plan' (rather than 'programme') throughout the report to signify the distinction between broader diabetes strategies (i.e. plans) and specific diabetes disease management programmes.

## What this policy brief seeks to address

This policy brief seeks to identify the key enablers and barriers to the development, implementation and sustainability of national diabetes plans in European countries and so inform countries' efforts to build a successful and comprehensive strategy through the exchange of good practices. It will do so through:

- describing experiences of EU and EFTA countries in the development, implementation and evaluation of national diabetes plans;
- exploring the added value of national diabetes plans, focusing on their perceived use and usefulness; and
- assessing the lessons that can be learned from national diabetes plans for the development of national strategies for the prevention and management of chronic diseases more broadly.

The approach to data collection on national diabetes plans in European countries that was undertaken as part of JA-CHRODIS and formed the basis for this policy brief is detailed in Box 2.

### Box 2. Methods

The mapping of national diabetes plans (NDPs) across EU and EFTA Member States used a data collection template, which was based on the 'Guide to National Diabetes Programmes' developed by the International Diabetes Federation.<sup>17</sup> Questions derived from the IDF Guide were supplemented with questions related to the current status of NDPs in EU and EFTA Member States as of August 2014, along with open-ended questions to collect experiences of NDP preparation and implementation, with a specific focus on sustainability and roll-out.

The questionnaire was piloted in September 2014 using Italy, Slovenia, Finland, Germany and Norway (the partners of Work Package 7 in charge of this deliverable) as case studies to test the appropriateness of the questions and to assess the effort required to complete the questionnaire. As a result of the pilot, some questions were rephrased to improve clarity. The questionnaire was then emailed to JA-CHRODIS project partners of Work Package 7 on diabetes and partners of other JA-CHRODIS work packages; for countries with no representation in the JA-CHRODIS project, potential respondents were identified through the European Patient Forum and the International Diabetes Federation European Region (IDF Europe). The list of respondents is shown on page 3. Of a total of 35 organizations and institutions in 31 countries that were approached for the survey, 24 in 22 countries responded and these responses are presented in this policy brief.

Potential respondents were provided, in advance and by email, with comprehensive information about JA-CHRODIS and the aim of the survey. Respondents were assured that information to be collected would not be used to examine the performance of policies or plans in any given country, to rank countries according to their policies and plans or as a benchmarking tool.

The questionnaire comprised four core parts with 36 questions eliciting information on: (i) current NDP status as of 31 August 2014; (ii) experiences of the process of NDP preparation, implementation, sustainability and spread, along with perceptions of the most important changes, including past and future activities in relation to the

NDP; (iii) scope of the NDP; and (iv) evidence of adherence to core standards as proposed by the International Diabetes Federation. To ensure common understanding of the terms used in the questionnaire, the IDF Guide (2010) was used as a reference.

Completion of the questionnaire required an average of 45 to 60 minutes and respondents were given four weeks with two reminders for completion, allowing for further extension if required. Data collection was between the end of September 2014 and the end of December 2014, with a final round of clarifications completed in January 2015.

Completion of the questionnaire was followed by teleconferences between the individual respondents and the lead researcher within JA-CHRODIS overseeing the mapping exercise in order to clarify points that were unclear or to gather additional information where necessary. Respondents from 14 countries requested such a discussion about the information provided. When it was not clear how a response should be categorized, the IDF Guide and its definitions were used to further specify a given question. A revised version of the completed questionnaire was then emailed to the lead researcher and checked again for completeness. If further inconsistencies were found, the respondents were contacted again.

The policy brief does not attempt to provide a review of the overall evidence of the epidemiology of diabetes and of diabetes care services as they relate to the prevention, screening and management across European countries. Indeed, such evidence has been reviewed, in detail, by the European Coalition for Diabetes, with its most recent report providing a comprehensive overview of trends and developments in diabetes in the European region.<sup>3</sup>

## The evidence

### The majority of countries surveyed currently have a formal national diabetes plan in place

As of August 2014, seven of the 22 countries that responded to the survey had no formal NDP, as defined for the purposes of this study, in place (Austria, Belgium, Bulgaria, France, Germany, Latvia and Lithuania). Two countries had concluded a previous NDP and not (yet) developed a follow-up (Denmark, Finland), while in the Netherlands the NDP has been succeeded by a new national strategy and the implementation of 'Diabetes Care Standards'. In Norway (and Sweden) diabetes was included as part of an overall strategy targeting chronic diseases more broadly (Box 3). Austria, France and Germany reported not having an NDP in place as such but referred to national diabetes disease management programmes (DMPs) as the major approach to addressing diabetes through several disease-specific and non-specific measures. The development and implementation of an NDP was reported to be a legal requirement in Croatia and Spain.

### Box 3. Pursuing broader NCD policies – the case of Norway

Norway has opted for developing a common strategy for the prevention, diagnosis, treatment and rehabilitation for several chronic diseases within the framework of its broader NCD-Strategy 2013–2017.<sup>18</sup> The strategy targets cardiovascular disease, diabetes, chronic lung disease and cancer together on the grounds that they share a number of commonalities, and the recognition of the potential for their prevention and reduction of associated disability and premature death. Common features include that those affected by them often have several of the diseases and that these conditions share several of the key lifestyle-related health risk factors such as tobacco use, an unhealthy diet, lack of physical activity and misuse of alcohol. The NCD strategy further recognizes the core role of living conditions, social differences and the organization of society more generally as important determinants of health and the distribution of health in the population.

Similarly, the strategy acknowledges that the conditions covered by the NCD strategy should respond to similar preventive measures at a population level while their management and control face common challenges and solutions in the health and care services, in terms of prevention, diagnosis, treatment and rehabilitation.

The NCD strategy was largely based on existing national action plans, strategies and guidelines and was implemented within current budgets. The ambition was that the strategy would help Norway to achieve its goal of a 25 per cent reduction in premature deaths from these conditions by 2025. The strategy should also help to maintain functional status, minimize distressing symptoms, prolong life through secondary prevention and enhance quality of life overall.

The key features of the NCD strategy are its combination of cohesive and unified efforts at all levels to address chronic conditions overall while maintaining the efforts that are specific to each disease. The strategy is therefore divided into a joint section with common challenges and measures, and a section with specific challenges, goals and measures for each disease group.

### National diabetes plans typically take a broad approach, capturing prevention and treatment and seeking to place the patient at the centre

Most of the NDPs focused on diabetes broadly, covering type 1 and 2 diabetes, along with gestational diabetes. Most countries with a dedicated NDP in place target the whole population. Plans in place in Finland, Italy, Norway and Slovenia do not explicitly address the prevention of type 2 diabetes among children and adolescents although these groups were generally included as part of the whole population approach to diabetes care adopted in these countries.

Generally, NDPs as described by respondents to the JA-CHRODIS survey tended to take a patient-centred approach and people with diabetes were consulted about their needs in order to develop the plan, although not all countries appeared to include diabetes patients in the group responsible for NDP implementation. It was noted that NDPs typically focused on ensuring equitable access to health care regardless of geography, socio-economic status, language, culture or ethnicity. However, only half of the NDPs as described by respondents took into account individual differences, preferences and cultural diversity in developing the plan.

### Prevention and treatment

NDPs typically include prevention, early diagnosis, routine care and services, and patient education in all countries although respondents in some countries noted that specific aspects might be covered under other national-level plans or strategies, such as in Denmark, Italy and Spain. Respondents for the Netherlands highlighted that the NDP positioned the individual at the centre and that it also seeks to identify legal or regulatory barriers to improved prevention and care. Three countries did not specifically include the provision of services, equipment and medical supplies as part of their NDP or of their wider NCD strategy; these were Denmark, Greece and Norway. In France there is no specific plan for health professional training.

### Healthy public policies

In all countries it was reported that the NDP addressed environmental interventions aimed at minimizing exposure to and reducing risk factors for diabetes, particularly healthy food; in some cases this was covered by other strategies targeting nutrition and diet specifically (Austria, Denmark, France and the Netherlands). Plans or strategies addressing healthy public policies were reported to be in place for all countries; the only exception was Greece, where the existence of relevant policies was not explicitly mentioned to form part of the NDP. The respondent from Slovenia highlighted the difficulties in identifying existing healthy public policies and to then establish links between them and the NDP.

Half of the NDPs described in this survey were reported to cover healthy urbanization, while only a small number of plans specifically considered healthy businesses. There was a perception among respondents that while the development of a comprehensive, multisectoral approach to diabetes that also included factors from outside the immediate health sector was desirable, this was at times not possible to achieve. In a number of countries there was little experience of strong multisectoral working and for example in Slovenia, involving actors from outside the health sector was seen to be unachievable under the NDP, which was developed under the auspices of the Ministry of Health. A similar experience was reported for Lithuania (see also Box 4).

### Early detection

Identifying high-risk individuals and preventing the onset of diabetes in those at risk was a common aspect of NDPs across the countries for which data were collected, although about one third of countries that did report having an NDP in place did not include early detection of diabetes among groups at risk. The respondent from Norway highlighted the potential downsides of risk profiling, which was seen to potentially lead to over-diagnosis and pathologizing selected groups and this was the subject of ongoing debate in the country. Workplace interventions for individuals at risk did not typically form a core part of NDPs and community awareness campaigning was also not universally included in NDPs or other plans.

### Routine care

All countries that did report having an NDP in place included routine care of diabetes as part of the plan, although this was at times addressed as part of (separate) clinical guidelines and protocols rather than explicitly targeted within an NDP (Denmark and France). This was also the case in Norway and Sweden, which, as noted above, included diabetes in a wider national plan targeting chronic diseases. Routine care as specified within the NDP, or where this was addressed under a clinical guideline, tended to cover monitoring of the processes of care, self-management support and patient education, along with dietary advice, physical activity, complications screening, and regular clinical monitoring. The questionnaire did not specifically explore self-management or clinical monitoring and it is therefore not possible to provide further detail on the uptake of these measures in routine practice.

### Human resources

Half the countries reported including a human resources strategy as part of the NDP; where the NDP did not explicitly address human resources, this was often, although not always, covered under other strategies, for example targeting chronic diseases more broadly. A dedicated human resources strategy can be seen as an important element given the crucial role of frontline staff in the implementation of an NDP.

### Monitoring and evaluation

NDPs usually included some form of monitoring and surveillance, and this appeared to be mostly focused on diabetes prevalence and incidence, access to services and clinical outcomes. Most countries were reported to have some form of system in place for the collection of data on diabetes. Respondents from Slovenia highlighted the challenges of establishing routine data collection systems, and this was attributed, mainly, to the inability of those in charge to reach an agreement on ownership of the system and their accountability, but also to the challenge of ensuring compatibility between databases.

The monitoring of costs associated with plan implementation appeared to be less frequently used, as was the monitoring of community awareness. According to the survey data, only five countries included monitoring and surveillance of all these aspects (Croatia, England, the Netherlands, Slovakia and Slovenia). In Finland an annual national survey was conducted to monitor awareness of the NDP.

Most countries were reported to have an evaluation strategy for the NDP in place; respondents from Denmark, England, Greece, Ireland and Norway did not specifically mention that their NDP included an evaluation strategy. Most countries noted that the development of the plan was informed by some form of situation or needs assessment, and most also reported to have some form of baseline data available. At the same time country respondents provided little concrete information on approaches to and findings of evaluations, where these were conducted.

There is a range of factors appearing to facilitate the development, implementation and sustainability of national diabetes plans, including: multiple stakeholder involvement; dedicated resources; national (or regional) leadership; and patient representation in plan development and implementation.

The NDPs in place generally took a few years to develop, with up to six years reported for the Netherlands. Respondents from a small number of countries (Norway, Slovenia) highlighted the time constraints under which the national plan had to be developed. For example, the respondent from Slovenia noted that the development of the NDP had to be undertaken on top of day-to-day work, thus placing considerable constraints on those involved and potentially, although not necessarily, impeding the implementation of a national plan.

Important drivers of NDP development that were described included identified shortcomings in care processes for people with diabetes. Examples include a lack of standardized treatment regimes and of transition management, prompting the development of structured diabetes disease management programmes in Austria; or a perceived undersupply of specialized structures (e.g. outpatient units for foot care) seen to lead to poor outcomes in England. Evidence of the costs associated with diabetes care was also seen to be influential (Finland, Ireland), along with evidence on the effectiveness of preventive measures.

### Multiple stakeholder involvement

Respondents from Belgium and Spain reported the key role played by lead individuals in driving the agenda for developing an NDP, with Belgium yet having to develop a national-level strategy (Box 7). Many countries highlighted the importance of clinicians and of the Ministry of Health in facilitating the development and approval of the NDP, and its implementation and sustainability at the national (Croatia, England, Lithuania, Portugal, Slovakia, Slovenia and Spain) or subnational (Belgium) level. National diabetes associations and patient organizations were seen to have played an important role in countries such as Denmark, Finland, Greece, Lithuania and Slovenia. For example, in Denmark the Danish Diabetes Association was reported to have pressed for the NDP to be developed and to have provided considerable input into the final document. In Greece the development of the NDP was seen to be a 'bottom-up' process driven by non-government organizations, including the diabetes associations, patient organizations and individual health professionals with a vision for a better future in the management of diabetes at the national level.

Respondents from Denmark further noted that there had been a sense that 'something had to change' and that there had been sufficient good will among stakeholders to enact such change; this kind of enthusiasm was also noted as an important factor for implementation by respondents from Finland. In Slovenia cooperation and collaboration between stakeholders involved were seen as central to implementation of the NDP and this was achieved through the creation of a steering group, which was seen to act as a 'multiplier' in that members of the steering group relied on strong

networks at their respective institutions to mobilize as many people as possible for implementation. Respondents in around half the countries were reported to have a steering committee or task group in place, although these groups were typically only established for the duration of the plan (for example in Denmark). Overall, ensuring a broad collaboration among key stakeholders was considered of core importance in most countries. Indeed, the collaborative way in which the NDP was developed in Slovenia was noted as an important facilitator for development and implementation and the process itself was perceived to have created a momentum for implementation.

Respondents from Italy also highlighted the role of supranational policies such as the aforementioned resolutions and commitments issued by the United Nations and the European Union in stimulating the development of a national diabetes plan. Other countries highlighted the potential for cross-national learning in NDP development, an aspect highlighted as an important feature in the development of the NDP in Lithuania (Box 4).

#### **Box 4. Cross-national learning and NDP development in Lithuania**

The development of the NDP in Lithuania was initiated by the Lithuanian Society of Endocrinology in 2013 by asking the Lithuanian Ministry of Health to organize a working group on this issue. The working group was established in March 2014, bringing together representatives from the Ministry of Health, endocrinologists, general practitioners, a representative from the patient organization, and representatives from the National Health Insurance Fund. The Ministry of Health is the formal leader for the development of the NDP.

The NDP builds on earlier documents developed in Lithuania, such as the Diabetes Control Programmes 2006–2007 and 2009–2011, among others. Experiences in other countries, in particular evidence from Denmark, Finland, Hungary, Poland, Portugal, Spain, Sweden and England, were also studied. The review of the evidence of NDP experiences elsewhere sought to incorporate the main goals reflected in other NDPs in the Lithuanian strategy, where they could be implemented. Examples include: improving data collection through integrating electronic data capture models across the country or implementing fundus photography for annual retinal screening, among other aspects. The development of the Lithuania NDP also drew on the ‘Guide to National Diabetes Programmes’ developed by the International Diabetes Federation.<sup>17</sup> However, it proved not feasible to incorporate all elements of the IDF Guide in the development of the NDP in Lithuania as this would have required a high level of intersectoral collaboration, which was seen to be too difficult to achieve in practice at present.

The Lithuanian NDP was submitted to the Minister of Health in June 2015 and it is expected to be implemented starting in 2016.

Source: Žydrūnė Visockienė

Respondents from Denmark, Greece and Slovenia further noted the need for flexibility, highlighting the requirement for the NDP to be revised in response to changes in the organization of health services more broadly as countries continue to reform their health systems towards better meeting the needs of a changing fiscal and demographic environment.

#### **Dedicated resources**

The NDP was usually endorsed or led by the Ministry of Health, and half the countries appeared to have dedicated funding attached to the NDP. Respondents from several countries stressed that the availability of dedicated financing had been important in enabling the development, implementation and sustainability of an NDP (the Netherlands, Portugal, Slovakia). Elsewhere, the absence of such sustainable funding was seen to pose considerable barriers towards the implementation of a comprehensive plan (Bulgaria, Croatia, Greece, Ireland, Italy, Norway). For example, in Italy regional health authorities are responsible for local implementation of the NDP, but it was noted that local implementation would have required additional funding to enable recruitment of further staff, and to fund staff training, services, including community services, supplies and infrastructure, along with public health communication campaigns. Respondents from Spain noted that, from their experience, dedicated financing would be required to facilitate the actionable aspects of the NDP. However, and similar to Italy, the NDP in Spain was developed at the national level whereas its implementation and financing depended on the regions, which were required to adapt the NDP to their local needs. For these reasons, the NDP in Spain did not include specific activities to be implemented locally as this is in the remit of the regions, and accordingly, dedicated funding was not allocated by the centre either. At the same time there was a perception in both Italy and Spain that having a national framework was important to signpost diabetes as a national priority and to guide regional implementation, while leaving sufficient flexibility on the ground to enable meeting the needs of the local population.

#### **National and regional leadership**

To ensure that adequate financial and human resources were made available, some respondents noted the importance of having political support from the Ministry of Health (Greece, Lithuania, Slovakia). Overall, the importance of strong political commitment to making diabetes prevention and care a policy priority was noted by respondents from several countries (England, Spain), and such commitment was seen to be necessary for implementation (Croatia, England, France, Greece, Ireland) as well as sustainability (Box 5).

### Box 5. The role of political commitment in NDP development and implementation in Portugal

Portugal has had a national programme for the control of diabetes in place since the 1970s, seeking to integrate the various levels of diabetes prevention and management. The programme was reviewed in 1989 to further strengthen integrated care and to involve stakeholders in all aspects of the diabetes care continuum and collaboration agreements between the Ministry of Health and organizations representing people with diabetes, research institutions, the pharmaceutical industry, and pharmacies, among others, in an initiative supported at the time by the World Health Organization, and in line with the St Vincent Declaration.

This inclusiveness was to remain as a common feature in the following NDP, which was launched in 2007. It established a top-down vision of the mission to provide care and prevent complications, and to prevent or delay the onset of diabetes, through the restructuring of the health system towards patient-centred integration between primary and hospital care at the municipal level and in coordination with the social municipal network. It also promoted political awareness, again taking advantage of the involvement of a broad set of stakeholders. In 2012 this NDP was recognized as one of the nine Priority Health Plans established by the Ministry of Health and a corresponding 'Programme for Diabetes' seeks to translate the diabetes priority health plan into action. This recognition strengthened the ability of the NDP to promote changes in the organization of health care structures, mainly by enabling the Ministry of Health to develop a nationwide network of Diabetes Coordinating Functional Units directly.

In June 2015, in order to support the ongoing efforts to improve health care and diabetes prevention, a group of members of the Portuguese parliament presented a resolution 'Enforcing measures to prevent, control, and treat diabetes', which was subsequently amended and unanimously approved in July 2015. The resolution makes recommendations to the government in terms of specific actions to be adopted for diabetes prevention, food policies and taxation, outreach, communities, education, medication, integrated care and secondary prevention.

Source: José-Manuel Boavida, Ana-Cristina Portugal and Rogério Ribeiro

The need for strong political leadership and commitment at the national level to ensure successful implementation and sustainability at regional and local levels was highlighted as a key issue in decentralized systems in particular. For example, respondents from Austria noted that in the regions that did not implement the DMP there was a lack of political will on the part of regional health insurers or regional physicians' associations or regional governments to implement it; or they were not willing or able to dedicate resources for financial incentives for physicians. Ensuring commitment from regional administrations for implementation was reported to

be a challenge in Portugal, and resource constraints at the municipal level were noted as a potential barrier to national roll-out in Sweden. Regional and provider autonomy were seen as barriers to country-wide implementation in Finland and Italy, and respondents perceived this to limit the potential for nationwide implementation in countries such as England. In Finland regional and provider autonomy were seen to be manifested in different hospital districts and municipalities having differing electronic patient records systems, which in itself was seen to pose a barrier to implementing the NDP where it was in place. At the same time respondents from Finland also noted that a more focused agenda could potentially have made implementation easier at a local level as it had numerous goals and target groups (e.g. high-risk prevention, comprehensive care, population level activities, etc.). It was further noted that the involvement of communication officers responsible for the internal and external communication of the plan was crucial for its implementation (see also Box 6). Similarly, respondents from Sweden viewed active communication at the local level to be of key importance in ensuring implementation.

Most NDPs were reported to have documented implementation or action plans and a lack thereof was seen to pose a challenge for implementation, such as in France. Specifically, there was a perception that explicit objectives related to diabetes in the national strategy for health would be useful to make implementation of the NDP more successful. An important aspect of successful plan implementation mentioned by some respondents was the need to ensure consistency between the broader goals and objectives set out by the plan and the need to devise specific action plans to guide implementation in line with the broader plan, alongside setting appropriate incentives. Respondents from Denmark reported a lack of connection between action plans set out in the NDP and actual incentives to implement the plan, which was seen as a key impeding factor for implementation. Respondents from Croatia cited the National Insurance Health Plan, which incentivizes family doctors to implement NDP clinical guidelines and protocols.

### Patient representation in plan development and implementation

In several countries patient associations not only were important in driving the development of NDPs as described above, but also played a crucial role in implementation, such as in Denmark, Finland, the Netherlands and Norway. For example, in Finland a national programme for the prevention and care of diabetes was initiated and coordinated by the Finnish Association for Diabetes (Box 6).

### Box 6. Achieving long-term impact in Finland

In Finland the Development Programme for the Prevention and Care of Diabetes 2000–2010 (Diabeteksen Ehkäisy ja Hoidon Kehittämis Ohjelma; DEHKO) aimed to prevent type 2 diabetes and diabetes-related complications, to improve the quality of diabetes care, and to support the self-care of people with diabetes.

DEHKO was initiated by a strong and dedicated patient organization and further facilitated by support from national authorities. Public sector, primary health care, specialized health care, third sector (NGOs), private companies (pharmaceutical, food, and medical supplies industry), research institutes, universities, and decision-makers at both national and local levels were involved and engaged from the beginning of the planning process.

Communication and dissemination were selected as priority areas in the project. Using a media monitoring service to monitor visibility of the programme, available evidence suggests that DEHKO had achieved widespread media visibility and that it was well known among professionals, patients, the general population, and political decision-makers.

DEHKO provided an overarching framework for activities but the specific design was left to partners locally. This led to a range of new models and practices to be developed bottom-up, taking account of local needs, resources and initiatives. Support at national level included the development of models, methods and tools for strengthening self-efficacy, self-management and patient-centred care and many of these were adopted by other regions and actors.

There was an identified need for education and training, with the training of health care professionals emphasizing the adoption of new, patient-centred tools and techniques in prevention and care. This approach was subsequently included in the health care professionals' training curricula and in further training, such as continuous professional education.

DEHKO operated together and collaborated with other health promotion plans. The legacy of DEHKO is continued in 'One Life', which is a concerted action by several patient and public health organizations.

DEHKO was evaluated internally and externally.<sup>19</sup> The results of two interim evaluations were used to steer DEHKO and refine its goals and practices.<sup>20</sup> Evaluations undertaken to date identified successes and needs for improvement, but the general conclusion was that DEHKO had achieved its goals.<sup>21, 22</sup>

Source: Jaana Lindström

Likewise, in the Netherlands the National Diabetes Federation was the coordinator of the NDP and most of the project managers for different components were appointed by the Federation, which also coordinated communication between the Ministry of Health and those implementing the plan. In Denmark the diabetes association was seen to play the role of an overseer, that is, monitoring implementation and identifying risks such as inequalities in access to care between regions, as well as acting as a 'responsible partner' in working to implement the NDP with regions, the Ministry of Health and the National Health Board. In Belgium, which at the time of writing did not have an NDP in place, the Flemish diabetes association implemented and coordinated a plan for gestational diabetes (Box 7).

### Box 7. A prevention programme for women with a history of gestational diabetes in Flanders, Belgium

The 'Zoet Zwanger' project was launched by the Flemish diabetes league (Diabetes Liga) in October 2009 in the Flanders region of Belgium. Supported by the Flemish government, the project aims to promote regular blood glucose screening of pregnant women in primary care and lifestyle changes in women with previous gestational diabetes.<sup>23</sup>

The project comprises several steps, including, first, an awareness campaign targeting pregnant women, women with gestational diabetes, and health care providers about the possibility for prevention and early detection of type 2 diabetes. Second, women diagnosed with gestational diabetes were invited to participate in a recall register with annual reminders (letter/e-mail) asking them to see their general practitioner for a check-up involving blood glucose screening and BMI. The 'Zoet Zwanger' project is seen to offer a clear framework to promote diabetes prevention and early diagnosis in women with previous gestational diabetes. The project received widespread support by both health care providers and affected women. For example, by 2015 over 6,000 women had registered with the project and some 2,835 GPs had confirmed their active participation in the project. The latter was seen as a positive development because the GP has an important role in the long-term follow-up of diabetes risk. The project is seen to provide opportunities to implement lifestyle changes early in the course of diabetes, to halt disease progression and reduce costly complications. As follow-up of registered women is ongoing, further long-term data will provide insights into compliance and possible health benefits in due course.

Source: Valentina Strammiello and Sabine Verstraete

## Human resources

The availability of human resources was noted as an important factor in NDP development, implementation and sustainability. Examples presented included recruiting a dedicated specialist in podiatry or diabetes care nurses in Ireland, or developing the training of diabetes nurses in Lithuania and Slovenia. A number of country respondents further highlighted the need to have the right mix of staff in place to facilitate implementation of the NDP. For example, respondents from Italy reported the challenges in creating partnerships between primary and secondary care levels to build multidisciplinary teams, which were seen to be essential to enhance diabetes care (see also Box 5). These challenges can mainly be related to a lack of experience and resultant resistance among both professionals and institutions to work in multidisciplinary teams; it was noted that the development of systems for information sharing between physicians and patients could have facilitated this. Changing the attitudes and values of staff working in the system was seen as a key barrier to implementation in Slovenia, while engaging health professionals was also seen as a challenge. Several countries highlighted the key role of ensuring 'ownership' of the NDP by all stakeholders, including health care staff and institutions at the local level for implementation and sustainability (Ireland, Norway, Portugal, Slovakia, Slovenia, Spain).

There was a small number of facilitators identified by respondents that appeared to be more specific to individual countries. For example, the respondent for England highlighted the role of the payer for health services in improving the quality of care by holding providers to account and being held to account by the Ministry of Health. Respondents from Slovenia noted that there was a need to give the NDP and its steering group a clearer executive role to increase its capacity to make systemic changes. Respondents from England and Slovenia further highlighted the role of improvements in the quality of diabetes care over time that were seen to have promoted the sustainability of changes introduced by the relevant NDP. Routine monitoring of processes and outcomes were seen to be key to inform care provision and improvement strategies overall (Norway, Sweden). Respondents from Greece noted the importance of being able to draw on existing diabetes prevention and management models based on those developed by the European Association of the Study of Diabetes or the American Diabetes Association guidelines in facilitating sustainable implementation of the NDP.

#### **Box 8. Health action by teams of self-employed health professionals (ASALEE) in France**

The 'Health action by teams of self-employed health professionals' (ASALEE) in the Deux-Sèvres region was set up as an experiment in 2004; it linked 41 GPs and eight nurses for primary care provided in private practices, in order to improve the quality of health care, especially for patients with chronic diseases. This experiment implied a substantial shift in usual ways of working, with GPs in France typically working as sole practitioners in their own practice. The role of a nurse practitioner as introduced within the project did not yet exist at the time the project was implemented. Nurses are responsible for sharing follow-up and providing patient education about diabetes and cardiovascular risk factors, as well as screening for cognitive problems in individuals over 75 years old. These nurses also assist doctors in cancer screening campaigns. The experiment required the implementation of organizational components such as shared information systems as well as interprofessional cooperation. The experiment was closely monitored by the national authority for health and by regional health authorities. An evaluation undertaken by the research institute IRDES showed that, at the same cost, glycaemic control in the intervention group was better than for controls. ASALEE now has 10 years of experience. The ongoing final evaluation will build the case for its extension as part of a strategic shift in outpatient care organization for chronic diseases in France. The fact that the experiment was designed in a bottom-up approach by a group of GPs that expanded voluntarily to over 350 individual GP practices was seen to be central to its successful uptake. ASALEE has since expanded beyond the Deux-Sèvres region and about 1,000 GPs are currently registered in different regions along with 137 nurses; further expansion is expected.

Source: Alain Brunot; Chevreur et al. (2015)<sup>24</sup>

#### **Enabling local innovation for adoption and dissemination**

There was a perception that innovative practices developed at the local level may serve as models to scale up and disseminate good practices more widely. However, although many countries reported on successful projects at local level (Box 8), further scale-up was typically not mentioned. For some, scale-up was not necessarily seen as desirable (Norway) as local interventions were seen to be based on local needs and the experience may be difficult to translate to other localities with different needs.

A number of countries highlighted the role of informal exchanges of 'best practices', through for example networking meetings (Portugal, Sweden). Respondents from England reported on more formalized exchange mechanisms, such as the set-up of national bodies which were tasked with the spreading of good practice. Respondents from Spain noted that exchange was a standard procedure for the identification, collection and dissemination of good practice on health action in the context of the national health system (Box 9).

#### **Box 9. Sharing local good practices in Spain**

The 2003 Act of Quality and Cohesion of the National Health System (Ley de Calidad y Cohesión del Sistema Nacional de Salud, 2003) required the establishment of a registry of good practices that would collect information on innovative interventions that improve the delivery of health care services. Each year, the Ministry of Health calls for applications to be added to the catalogue of good practices in several priority areas. A good practice is defined as an intervention or experience that responds to one of the strategic lines of the National Health System, is based on the best available scientific evidence, has been shown to be effective, is transferable and represents an innovative element for the health system.

The regional health services submit good practices for evaluation by a committee according to pre-established criteria. The essential criteria are: adequacy (developed within the National Health System), pertinence (relevant to the established priority areas), and evaluation. Other criteria include whether the good practices are evidence-based, effectiveness, transferability, innovativeness, efficiency, sustainability, equality, gender-focused, participation of citizens or involved persons, intersectorality, and ethical aspects. Practices meeting these criteria are approved to be included in the catalogue at the Interterritorial Council (the body of cooperation and communication among the regional health departments and the national Ministry of Health) and published on the Ministry's web site.<sup>25</sup> A good practice may be removed from the catalogue and archived if it has reached nationwide implementation or it has been superseded. At the time of writing there was no empirical data on the impact of the catalogue in terms of take-up and roll-out of good practices across the country.

A small number of countries reported on the challenges faced in promoting the wider take-up of new practices, frequently citing resistance from health professionals particularly at the primary care level as one barrier, but also a lack of resources available for scaling up, along with institutional inertia (England, Portugal).

Several countries described observed impacts of the NDP, typically highlighting improvements in the quality of diabetes care as noted above (England, Finland) and strengthened screening and prevention (Finland, France, Ireland, Portugal). Denmark and the Netherlands mentioned the introduction of new clinical guidelines to have resulted from the NDP, with Slovakia adding that guideline introduction was accompanied by new equipment and greater availability of new diabetes drugs. The NDP was also seen to have brought a renewed focus on data sharing and quality in Denmark and the launch of larger research studies in Slovakia. It was perceived to have fostered greater collaboration between stakeholders (Italy, Netherlands, Slovenia). Austria reported evidence of enhanced patient satisfaction with the care they received under disease management programmes. In England enhanced patient adherence with treatment was reported. As noted above, overall country respondents provided little concrete evidence on formal evaluation frameworks and empirical evidence of the impacts of NDPs.

### What we don't know

The principle guiding the JA-CHRODIS was that the final results and deliverables (including this policy brief) were to be based on the experiences of EU and EFTA Member States and to be produced in a collaborative and consensual way among those who responded to the JA-CHRODIS survey (see page 3 for a list of respondents). Consequently, while the institutional context of respondents varied between countries, which meant that they presented a particular perspective, it also served to bring in a wider range of different perspectives than would have been the case if, for example, respondents had been limited to only those in academia or government.

Data presented in this policy brief are based on a structured survey and although great care was taken in verifying information collected from countries, differences in the understanding and interpretation of questions and definitions will prevail, both across and within countries. The extent to which different stakeholders expressed different views varied between countries and it was beyond the scope of this work to further triangulate divergent views within a given setting. For this reason it is important to note that the survey also assessed the narratives behind the development and implementation of NDPs.

As with any data collection method, there is a balance to be struck between breadth and depth. The survey that informed this report sought to provide a comprehensive assessment of the development, implementation and evaluation of NDPs across European countries as a means to understand national strategy development and the lessons that can be learned. Inevitably this focus meant that the questionnaire used to inform the survey could not consider every aspect that may be considered core to a comprehen-

sive NDP. For example, it is known that socio-economic position and ethnicity influence type 2 diabetes mellitus,<sup>26</sup> and that women experience diabetes differently from men, with women with diabetes at higher risk of heart disease and death from heart disease than men, among other gender-specific differences.<sup>27</sup> Yet the specific requirements of these groups were not captured in this round of the survey, despite available evidence pointing towards interventions that may effectively address diabetes in these populations.<sup>28</sup> Research and innovation were also noted as a gap in our understanding of NDPs, as were differences in the way education differed among countries to meet the needs of people with diabetes or their carers. This highlights important areas which should be addressed in future research.

The data presented here reflect a snapshot of experiences of developing and implementing NDPs in European countries as of August 2014. Although great care has been taken to update the information presented as much as possible, more recent developments will likely be missed. The use of a survey instrument also limits the extent to which subtle nuances of the development and implementation in different settings will be captured, and it is possible that some policies of historical note have been overlooked.

### Findings and evidence-informed options

This policy brief set out to identify the key enablers and barriers to the development, implementation and sustainability of national diabetes plans in European countries and so inform countries' efforts to build a successful and comprehensive strategy, through the exchange of good practices.

The mapping of experiences of EU and EFTA countries finds that the majority of countries reviewed have implemented or are in the process of implementing a national diabetes plan, although the way the NDP was conceptualized varied among countries. Regular assessments of national diabetes strategies in European countries carried out by the European Coalition for Diabetes suggest a declining trend in the number of countries developing a diabetes-specific national plan. This was attributed, in part, to an observed shift towards the development of strategies addressing chronic diseases more broadly.<sup>3</sup> Indeed, as the experience of Norway exemplifies,<sup>18</sup> there is a recognition in a number of countries that many of the major chronic conditions that contribute to the changing disease burden in Europe and elsewhere share common health risk factors that are amenable to wider healthy public policies while those with established disease require a more coordinated approach to care that embeds prevention at all stages.<sup>29</sup> Evidence reviewed in this policy brief also suggests that countries that had concluded a successful NDP in the past might not necessarily decide to renew that effort, in particular where the previous strategy had led to sustained change on the ground, as demonstrated by the success of the Development Programme for the Prevention and Care of Diabetes 2000–2010 (DEHKO) in Finland.<sup>20, 30</sup>

While evidence of the impact of the Norwegian NCD strategy 2013–2017 is yet to be established, the case of Finland highlights the need to bring together a broad

coalition of stakeholders, not only within the health care sector, for the NDP to achieve sustained change. However, as noted by the European Coalition for Diabetes 2014 assessment of diabetes and related policies and practices, the pursuit of a comprehensive, multisectoral approach to diabetes that also considers factors from outside the health sector appears to remain an aspiration rather than a reality in many European settings.<sup>3</sup> Indeed, as the mapping of NDPs in this policy brief demonstrates, while environmental interventions aimed at minimizing exposure to and reducing risk factors for diabetes were reported to form a key element of many national plans, strategies tended to focus on nutrition and diet specifically, typically involving behavioural interventions rather than broader sector-wide policies (such as taxation of unhealthy foodstuffs). Only a smaller number of NDPs also covered healthy urbanization and, less frequently, healthy businesses. This seems to present considerable loss of opportunity in adopting a whole-system approach to effectively tackling diabetes, and, by implication, other chronic diseases. Although the need for multisectoral approaches to improve health has been widely recognized, it has been challenging to achieve in practice.<sup>31</sup> The evidence reviewed here indicated that most NDPs are developed in ministries of health, but not all ministries of health have the necessary resources, skills or influence to make the case to other sectors that they should be involved in diabetes and wider chronic disease prevention. Broader intersectoral approaches are difficult to implement in particular where there has been little experience of working across government in the past. Moreover, as noted in some countries, developing such an approach requires competencies for cross-sectoral working and putting in place accountability mechanisms to ensure that commitments are translated into practice.

Work by the European Coalition for Diabetes identified a number of factors that were seen to facilitate the development and implementation of NDPs. These included active stakeholder involvement at all levels of the process as well as making available sufficient resources.<sup>3</sup> Similar facilitators were identified in an analysis of national cancer control programmes.<sup>32</sup>

Reflecting the insights by the European Coalition for Diabetes (2014) and the European Partnership for Action Against Cancer (2012), this policy brief identified a range of factors that appear to facilitate the development, implementation and sustainability of national diabetes plans, including: leadership and management, multiple stakeholder involvement, patient representation in plan development and implementation, and dedicated resources, among others. We reflect on these in turn.

**Leadership and management.** Support from lead clinicians and managers and their backing for the implementation process, alongside continued commitment to the innovation, is likely to enhance successful implementation. Often this has meant high-level political commitment to NCDs as a priority health issue. Implementation and sustainability at regional and local levels was highlighted as a key issue in decentralized systems in particular.

**Involving all key stakeholders.** The evidence showed that in the development of NDPs, the stakeholders involved were often Ministry of Health staff, diabetes specialists, diabetes organizations and patient groups. Hearing the voice of the service users who will be directly affected by changes has been shown to be important in delivering high-quality services to people with chronic conditions.<sup>33</sup> The staff providing the new services (usually in primary care or the community) are also key stakeholders and their concerns and ideas also need to be heard at an early stage.<sup>34</sup> Capacity building may also be required to ensure that primary care staff have the necessary skills to meet complex care needs and enable people to live better with diabetes and other chronic conditions, taking into account individual differences, preferences and cultural diversity in developing the plan.

**Patient representation in plan development and implementation.** Diabetes organizations and patient groups played a central role in developing NDPs and were key to the successful adoption and even implementation of the plans. Potentially, this single-disease focus made these groups more effective in advocating for change thereby facilitating greater influence over the policy process.

**Providing adequate resourcing for implementation of the NDP.** This meant investing in some infrastructure, particularly information systems, but principally in the health workforce. Shortages of adequately trained staff were noted as barriers to implementation of the NDP in some contexts. However, the evidence showed that such investment in the training of health workers was not necessarily with a single-disease focus, but part of wider changes to the way primary care was organized to better serve the needs of people with long-term conditions. Disease registers were highlighted by respondents as important levers for successful NDPs as a means to enable systematic monitoring and evaluation that can then inform further policy development, and the use of open data was found to have played a key role in pushing change forward in some contexts.

**Retaining flexibility in NDPs to allow for change over time while ensuring the strategy remains relevant.** The challenge to more rigid plans was the rapid pace of change in medical technologies and changes in the political environment which meant that a change of government could entail a change of direction in NCD policy. Retaining a certain level of flexibility could ensure continuity throughout the political cycle and in the context of emerging innovation, promoting longer-term sustainability.

**Striking a balance between centrally defined requirements and regional autonomy.** Stakeholders at different levels of the system have different and sometimes competing priorities. The evidence indicated that without some degree of flexibility in how plans are implemented locally, a gap between the plan intent and plan implementation can appear.

The balance between central requirements and local autonomy was found to be particularly important in those countries where the responsibility for health service provision is held at the regional level. The evidence indicated that this

can mean greater coordination is needed between stakeholders, but it also may have created the potential for innovation in meeting the needs of people with long-term conditions and where these innovations prove successful there is opportunity for them to be scaled up as appropriate.

While such balancing is particularly important for decentralized health systems where the implementation of such plans is the responsibility of the regional authorities or in strongly decentralized systems where a single national plan is not feasible or even desirable, it is also worth considering in the transnational context. Transnational organizations such as the European Union are well placed to help set the regulatory framework to support Member States and to enable innovation in the way they approach the control of NCDs. Innovative practices developed at the local level may serve as models for scale-up to disseminate good practices more widely.

***Learning from experience through monitoring and evaluation as well as transnational learning can help inform NDP development and implementation.***

Systematic assessments of existing inefficiencies in health service delivery and disincentives for the service user or provider to receive or deliver the highest possible quality care were used to inform change in some contexts. Where monitoring and evaluation were robust and transparent the resulting data were found to facilitate the implementation of NDPs. However, the monitoring and evaluation of NDPs has been highlighted as a particular weakness across Europe.<sup>3</sup>

The potential for transnational learning should also be acknowledged. While whole plans may not be suitable for 'transplant', given that, for example, there may already be consensus around working in multidisciplinary teams in one country which is absent in another. Nevertheless, there is great potential for countries to learn from one another in designing their own plans for improving NCD treatment and prevention programmes.

Having accurate data is widely acknowledged to form an important component of a successful national strategy to enable assessment of the 'true' burden of diabetes and to monitor the performance of care processes and so inform service development and policy development more widely. The aggregation and amalgamation of data from national registers have also allowed the development of indicators to monitor diabetes complications and the health of people with diabetes.<sup>35, 36</sup>

## Conclusions

The mapping of national diabetes plans (NDPs) in Europe that was undertaken as part of the EU Joint Action on Chronic Diseases presented in this policy brief showed that diabetes organizations and patient groups played a central role in developing NDPs and that they were key to the successful adoption and implementation of plans. Potentially, this single-disease focus made these groups more effective in advocating for change thereby facilitating greater influence over the policy planning and implementation process. At the same time, the evidence reviewed suggests that an NDP may not necessarily form a prerequisite for introducing the changes required to improve the prevention and treatment of diabetes. The mapping of NDPs presented here indicates that political commitment to prioritize either diabetes or NCDs more broadly was critical, but countries with broad NCD plans, NDPs and decentralized regional diabetes plans were all found to be implementing changes to improve the prevention and treatment of diabetes. Having a written NDP is, in itself, unlikely to bring about sustained change, but achieving wide-range buy-in from relevant stakeholders at all levels that act as multipliers of plan development and implementation, supported by strong political commitment and dedicated resources, is more likely to translate initiatives effectively into practice.

The relative advantages and disadvantages of a single-disease versus a multiple disease or more generalist approach remain under debate. However, ensuring plans that seek to target a wider range of conditions and their risk factors remain high on the political agenda could be challenging without the advocacy from single-disease focus organizations, which would have to work together at the risk of diluting their individual impacts. JA-CHRODIS selected diabetes as an example and 'tracer' in order to demonstrate the importance of holistic approaches to the prevention and treatment of chronic diseases and the potential for intersectoral working, which would allow countries to gain valuable experience which could then be applied to chronic diseases more broadly. This is important as findings from other parts of JA-CHRODIS have underlined the need for a comprehensive approach targeting not only diseases but also the social, cognitive and functional challenges faced by people with multimorbidity who have the greatest health needs.<sup>37</sup>

## REFERENCES

- 1 International Diabetes Federation (2015). *IDF Diabetes Atlas, seventh edition*. Brussels, Belgium: International Diabetes Federation. Figures cited were converted from US\$ and rounded to the nearest decimal, using the 2010 USD-EURO exchange rate of 0.755 (OECD Data. Conversion rates. URL: <https://data.oecd.org/conversion/exchange-rates.htm> (accessed January 2016)).
- 2 Zimmet P, Magliano D, Herman W, Shaw J (2014). Diabetes: a 21st century challenge. *Lancet Diabetes Endocrinol*, 2:56–64.
- 3 European Coalition for Diabetes (2014). *Diabetes in Europe: Policy Puzzle. The state we are in*. Brussels: International Diabetes Federation European Region.
- 4 Kanavos P, van den Aardweg S, Schurer W (2012). *Diabetes Expenditures: Burden of disease and management in 5 EU Countries*. London: London School of Economics and Political Science.
- 5 Zhang P, Zhang X, Brown J, Vistisen D, Sicree R, Shaw J, et al. (2010). Global healthcare expenditure on diabetes for 2010 and 2030. *Diabetes Res Clin Pract*, 87:293–301. Figures cited were converted from US\$ and rounded to the nearest decimal, using the 2010 USD-EURO exchange rate of 0.755 (OECD Data. Conversion rates. URL: <https://data.oecd.org/conversion/exchange-rates.htm> (accessed January 2016)).
- 6 Alberti K, Zimmet P (2014). Diabetes: a look to the future. *Lancet Diabetes Endocrinol*, 2:e1–2.
- 7 International Diabetes Federation Europe (2013). *Access to quality medicines and medical devices for diabetes care in Europe*. Brussels: International Diabetes Federation European Region.
- 8 United Nations General Assembly (2014). *Outcome document of the high-level meeting of the General Assembly on the comprehensive review and assessment of the progress achieved in the prevention and control of non-communicable diseases* (URL: [http://www.un.org/en/ga/search/view\\_doc.asp?symbol=A/RES/68/300](http://www.un.org/en/ga/search/view_doc.asp?symbol=A/RES/68/300), accessed November 2015).
- 9 WHO Regional Office for Europe (2012). *Action Plan for implementation of the European Strategy for the Prevention and Control of Noncommunicable Diseases 2012–2016*. Copenhagen: WHO Regional Office for Europe.
- 10 WHO Regional Office for Europe (2013). *Health 2020. A European policy framework and strategy for the 21st century*. Copenhagen: WHO Regional Office for Europe.
- 11 Council of the European Union (2010). *Council conclusions “Innovative approaches for chronic diseases in public health and healthcare systems”*. 3053rd Employment, Social Policy Health and Consumer Affairs Council meeting. Brussels, 7 December 2010 (URL: [http://www.consilium.europa.eu/uedocs/cms\\_Data/docs/pressdata/en/lsa/118282.pdf](http://www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/en/lsa/118282.pdf), accessed February 2016).
- 12 European Commission (2015). *The reflection process on chronic diseases* (URL: [http://ec.europa.eu/health/major\\_chronic\\_diseases/reflection\\_process/index\\_en.htm](http://ec.europa.eu/health/major_chronic_diseases/reflection_process/index_en.htm), accessed February 2016).
- 13 European Parliament (2012). *European Parliament resolution of 14 March 2012 on addressing the EU diabetes epidemic* (URL: <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P7-TA-2012-0082+0+DOC+XML+V0//en>, accessed November 2015).
- 14 European Commission (2014). *Chronic diseases summit (3–4 April 2014)* (URL: [http://ec.europa.eu/health/major\\_chronic\\_diseases/event/s/ev\\_20140403\\_en.htm](http://ec.europa.eu/health/major_chronic_diseases/event/s/ev_20140403_en.htm), accessed November 2015).
- 15 JA-CHRODIS (2014). *National plans* (URL: <http://www.chrodis.eu/our-work/07-type-2-diabetes/wp07-activities/national-plans/>, accessed November 2015).
- 16 JA-CHRODIS. *What is JA-CHRODIS?* (URL: <http://www.chrodis.eu/about-us/>, accessed November 2015).
- 17 International Diabetes Federation (2010). *A guide to national diabetes programmes*. Brussels: International Diabetes Federation.
- 18 Norwegian Ministry of Health and Care Services (2013). *NCD-strategy 2013–2017*. Oslo: Norwegian Ministry of Health and Care Services.
- 19 Finnish Diabetes Association. *DEHKO Publications* (URL: [http://www.diabetes.fi/en/finnish\\_diabetes\\_association/dehko/publications](http://www.diabetes.fi/en/finnish_diabetes_association/dehko/publications), accessed November 2015).
- 20 Finnish Diabetes Association (2008). *Dehko proceeds. Strategic plan for 2008–2010* (URL: [http://www.diabetes.fi/files/1103/Dehko\\_proceeds\\_Strategic\\_plan\\_for\\_2008-2010.pdf](http://www.diabetes.fi/files/1103/Dehko_proceeds_Strategic_plan_for_2008-2010.pdf), accessed November 2015).
- 21 Rautio N, Jokelainen J, Pölonen A et al. (2015). Changes in lifestyle modestly reduce the estimated cardiovascular disease risk in one-year follow-up of the Finnish diabetes prevention program (FIN-D2D). *Eur J Cardiovasc Nurs*, 14(2):145–52.
- 22 Wikström K, Lindström J, Tuomilehto J et al. (2015). National diabetes prevention program (DEHKO): awareness and self-reported lifestyle changes in Finnish middle-aged population. *Public Health*, 129(3):210–17.
- 23 Diabetes liga (2015). *Zoet Zwanger* (URL: <http://www.zoetzwanger.be/zoetzwangeralgemeen.aspx>, accessed November 2015).
- 24 Chevreur K, Brunn M, Durand-Zaleski I, Farsi F, Knai C, Nolte E (2015). France. In: Nolte E, Knai C (eds). *Assessing Chronic Disease Management in European Health Systems: country reports*. Copenhagen: WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies: 43–54.

- 25 Ministerio de Sanidad, Servicios Sociales e Igualdad (2015). Buenas prácticas en el sistema nacional de salud (URL: <http://www.msssi.gob.es/organizacion/sns/planCalidadSNS/BBPP.htm>, accessed November 2015).
- 26 Agardh E, Allebeck P, Hallqvist J, Moradi T, Sidorchuk A (2011). Type 2 diabetes incidence and socio-economic position: a systematic review and meta-analysis. *Int J Epidemiol*, 40(3):804–18.
- 27 Huxley R, Barzi F, Woodward M (2006). Excess risk of fatal coronary heart disease associated with diabetes in men and women: meta-analysis of 37 prospective cohort studies. *BMJ*, 332:73–8.
- 28 Legato MJ, Gelzer A, Goland R, Ebner SA, Rajan S, Villagra V, Kosowski M (2006). Gender-specific care of the patient with diabetes: review and recommendations. *Gender Medicine*, 3:131–58. Attridge M, Creamer J, Ramsden M, Cannings-John R, Hawthorne K (2014). Culturally appropriate health education for people in ethnic minority groups with type 2 diabetes mellitus. *Cochrane Database Syst Rev*, 4(9):CD006424. Dauvrin M, Lorant V (2014). Culturally competent interventions in Type 2 diabetes mellitus management: an equity-oriented literature review. *Ethn Health*, 19(6):579–600.
- 29 Nolte E, McKee M (2008). Caring for people with chronic conditions. A health system perspective. Maidenhead: Open University Press/McGraw Hill Education.
- 30 Niemi M, Winell K (2006). Diabetes in Finland. Prevalence and variation in quality of care. Tampere: Finnish Diabetes Association, STAKES.
- 31 McQueen DV, Wismar M, Lin V, Jones CM, Davies M (eds) (2012). Intersectoral Governance for Health in All Policies: Structures, actions and experiences. Copenhagen: WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- 32 Gorgojo L, Harris M, Garcia-Lopez E (2012). National Cancer Control Programmes: Analysis of Primary Data from Questionnaires, Final Preliminary Report European Partnership for Action Against Cancer (EPAAC) (URL: <http://www.epaac.eu/national-cancer-plans>, accessed November 2015).
- 33 Nolte E, Knai C, Saltman RB (2014). Assessing chronic disease management in European health systems: Concepts and approaches. Copenhagen: WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- 34 Nolte E (2015). Strengthening primary health care: Moving from experiments to routine practice. *Eurohealth*, 21:3.
- 35 European Best Information through Regional Outcomes in Diabetes (2015). A shared evidence-based diabetes information system (URL: <http://www.eubiroad.eu/>, accessed November 2015).
- 36 Hub for International health ReSearch (2015). Promoting the global coordination and use of health research (URL: <http://www.hirs-research.eu/>, accessed November 2015).
- 37 *Eur J Int Med*, 26(3):157–216 (April 2015) Special Issue on Multimorbidity in the Elderly.

