

National Diabetes Strategy

2006-2010

Foreword by the Minister of Health and Care Services

June 2006

Diabetes is one of the most prevalent diseases of our time. There are two types of the disease, Type 1 and Type 2, each of which has its own unique challenges. Diabetes has been diagnosed in 90,000 – 120,000 people, but it is estimated that there are almost as many undiagnosed cases. Both types of diabetes are on the increase, but Type 2 in particular.

If left untreated, diabetes can lead to serious complications of the heart, eyes, kidneys and feet, but good treatment raises life expectancy and the quality of life. Prevention through healthier diet, physical activity and smoking cessation can help to reduce the occurrence of Type 2 diabetes. Through the National Diabetes Strategy (2006 – 2010), the Government wishes to meet the challenges of the future in a proactive and cohesive manner. The strategic plan shall define how the nation shall apply its resources in a targeted manner, both to prevent diabetes and also to help individuals meet the challenges inherent to diabetes. Similarly, the strategic plan shall facilitate cooperation with voluntary stakeholders who deliver significant services in diabetes. The strategic plan embraces goals and measures within prevention, treatment, rehabilitation, education, cooperation and research.

Through this strategic plan, the Government wishes:

- to prevent new cases of Type 2 diabetes and slow the development of late-onset complications for both types of disease
- to reduce social inequality in health
- that the healthcare services delivered shall be equal

- to have reliable, systematic follow-up of people with a high risk of developing Type 2 diabetes
- to reduce the numbers of undiagnosed Type 2 diabetes

Coordination and cooperation are key factors in the success of the Diabetes Strategy. The work in drawing up the individual measures, and in the treatment and follow-up of the individual patient, must be facilitated by cooperation between the various sectors and operations. Strengthening the coordinator role of the Directorate for Health and Social Affairs will have major impact on securing the cooperation necessary to ensure a cohesive follow-up of the Diabetes Strategy. To this purpose, a Strategic Plan Director will be appointed in the autumn.

I should like to thank all those who have been involved in the work with this strategic plan or who have contributed with resources and input. I would like to extend a special thanks to the Norwegian Diabetes Association, which has contributed constructively by placing expertise and resources at our disposal.

Good luck with the continuing work!

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1. Introduction

1.1. Diabetes - a challenge to the nation

Diabetes mellitus is a chronic disease that places a major burden on the individual, their family and society. Around 90,000-120,000 people have been diagnosed with diabetes mellitus in Norway and it is estimated that there are just as many undiagnosed cases. The disease can lead to extremely serious consequences for those affected. Late-onset complications include blindness, kidney failure, foot amputation and increased risk of cardiovascular disease. Diabetes mellitus constitutes a major challenge that must be met in a proactive and cohesive manner.

Epidemiological mapping carried out by the Norwegian Institute of Public Health reveals that the number of people with this diagnosis in Norway has increased in recent years. Both national and international prognoses predict that this trend will continue in the years to come. The percentage of the population with diagnosed diabetes mellitus has increased in the last 50 to 60 years for both Type 1 and Type 2. The causes underlying this development are many and complex. Firstly, occurrence of Type 2 diabetes increases with age. Because we live longer now, it is reasonable to assume that the number of people with Type 2 diabetes will increase significantly. Studies also reveal that there is a correlation between overweight and increased probability of Type 2 diabetes, between

low physical activity and Type 2 diabetes and between smoking and Type 2 diabetes. It is also probable that improved diagnostic routines have led to an increase in the numbers discovered.

1.2. About diabetes mellitus

Diabetes mellitus is a serious disease in which the hormone insulin is either lacking, reduced in concentration or does not have an effect in the cells. The disease develops as the result of the interaction of genetic and environmental factors, the underlying trigger of which is still unclear. If left untreated, diabetes can lead to serious complications, but with good treatment, life expectancy and the quality of life are increased. A distinction is drawn between Type 1 diabetes and Type 2 diabetes.

1.3. Type 1 diabetes

There are around 25,000 people with Type 1 diabetes in Norway. The disease normally first occurs in childhood or adolescence. Type 1 diabetes gives clear symptoms, and diagnosis is therefore made quickly. The disease is primarily caused by a genetically determined destruction of the insulin-producing cells in the pancreas. Without insulin, metabolism does not take place. For Type 1 diabetes, regular injections of insulin are therefore necessary from the start of treatment. The prevalence of Type 1 diabetes has increased in many countries over the last 30 years, an indication perhaps that environmental

factors are part of the trigger. Currently, however the environmental factors are unknown, and thus it is not possible to propose measures that will prevent Type 1 diabetes. Norway has the third highest incidence of Type 1 diabetes in the world. We do not know the reason for this. The disease is treated with medication, but changes to lifestyle do help to prevent and delay late-onset complications.

1.4. Type 2 diabetes

Type 2 diabetes is the most common form of diabetes mellitus. It occurs primarily in people older than 30 years of age. The incidence increases with age, but the average age at onset is falling. Apart from genetic factors, overweight and lack of physical exercise are the most important causes of Type 2 diabetes. The progress of the disease is often slow and diffuse, and it may take a long time before a diagnosis is made. The presence of late-onset complications already at the time of diagnosis is therefore not uncommon. As mentioned in the introduction, it is presumed probable that there are many undiagnosed cases of Type 2 diabetes in Norway.

Type 2 diabetes is the result of a reduced effect of insulin combined with reduced secretion. Type 2 diabetes is normally treated by both changes to lifestyle and medication. Type 2 diabetes is more common among men than women and also occurs more frequently in ethnic minorities from Asia and Africa than in ethnic Norwegians. It also occurs more frequently in people with low education and income than those with high education and high income. Social inequality in health

applies equally to diabetes as it does to other major disease groups. The differences occur in all age groups and for both sexes. There are comparable social differences in diet and physical activity - groups with low education and income are more sedentary and have a less healthy diet than groups with high education and income. These social differences in lifestyle behaviour are important in the explanation of the social difference in the occurrence of Type 2 diabetes.

1.5. Impaired glucose tolerance

Reduced glucose tolerance is a risk factor for later development of diabetes and cardiovascular disease. Calculations indicate that around 12 % of the population has reduced glucose tolerance. One study found that around half of all those with impaired glucose tolerance developed Type 2 diabetes after 10 years¹.

1.6. Particular groups

The number of pregnant women with Type 2 diabetes has increased over the last 30 years. Diabetes in pregnancy occurs more than twice as frequently among immigrants from North Africa and South Africa than among ethnic Norwegians. Diabetes mellitus during pregnancy can increase the risk of complications at birth and of deformities in the child. Concomitantly, there has been a large reduction in infant mortality in the perinatal phase (the time immediately prior to and after a

¹ DECODE study group. Glucose tolerance and mortality: comparison of WHO and American Diabetes Association diagnostic criteria. *Lancet* 1999; 354:617-621.

birth) in pregnant diabetics. Children and young people, and people with diagnoses in addition to diabetes will also have particular need for coordinated efforts from the healthcare services to achieve good treatment results.

Equality of access to the healthcare services is a central health policy goal. This does not mean equality of strategies and measures, but that these must be tailored to the various patient groups. This work must respect the differing standpoints of the patient groups. One important element of the Diabetes Strategy is to initiate dialogues with special patient groups, such as groups within certain immigrant populations, to draw up dedicated measures to ensure that prevention and treatment are appropriately implemented.

1.7. Diabetes mellitus as an international challenge

The World Health Organisation has defined diabetes mellitus as one of the major challenges of the public health of the future. Around 200 million people have diabetes mellitus, and prognoses predict that this number can double within 25 years. Most of these new cases will be Type 2 diabetes, but the occurrence of Type 1 diabetes is also increasing. Diabetes mellitus thus constitutes a major global health challenge. Prioritisation of diabetes in Norway is a reflection of the global concern for the continuously increasing prevalence of diabetes mellitus. The rise in diabetes reflects the changes in living conditions and places a burden on the healthcare services worldwide. As the

average age of the population increases, the prevalence of Type 2 diabetes will also increase. It is estimated that every year around 3.2 million people die from the late-onset complications associated with diabetes mellitus.

1.8. Health economics

Diabetes mellitus constitutes a major economic burden for many countries. The economic consequences of diabetes mellitus for Norway are not known but we anticipate that, in the future, diabetes treatment will tie up a greater share of the health budget.

Correct prioritisation within the healthcare services will be targeted in coming years. Distinction will be made between prioritisation of clinical assessments for the individual patient, and assessments of the economic and structural conditions that form the base for how we will prioritise the various patient groups. Economic and structural prioritizations are made at the political level and the managerial level in the healthcare services. In both instances, the relationship between severity, efficacy of measures and assessment of cost-effectiveness will be a central issue. Sound health economic analyses contribute to the quality of analyses at the supreme level. Some aspects of diabetes make health economic analyses of particular importance: A comprehensive evaluation of prevention, the primary healthcare services and the specialist healthcare services must be a central aspect of the prioritization work, and include how rehabilitation should be maintained. Health economic analyses can provide a better foundation on which to prioritise between areas and

mechanisms. Prevention is of particular importance in diabetes. Experience has shown that prevention is an area that is easily neglected, perhaps because the effects are only seen after several years.

Sound health economic analyses can contribute to grounding these issues in the strategic plan and to focussing attention when measures are evaluated. Health economic analyses shall be used during the timeline of the Strategic Plan. Such analyses enable the investment of resources where they will generate the largest health gains. Thus, disease can be prevented at an early stage and complications and expensive treatments can be avoided.

1.9. Acute complications and late-onset complications

Type 1 and Type 2 diabetes are two diseases with entirely different causes. If the disease is not well-regulated, both Type 1 and Type 2 are associated with risk of acute and late-onset complications. Diabetes can result in serious late-onset complications of the heart, eyes, kidneys and feet. Diabetes is the most common cause of blindness in children; a number of people experience impaired kidney function, and some have to have a kidney transplant because of kidney failure. Every year around 400-500 above-the-ankle amputations are carried out in people with diabetes.² Diabetics have a lower life expectancy than the rest of the population. People older than 20 years with Type 2 diabetes are affected by cardiac infarct two to five times more often than others, and they have a two

² NSAMs action programme for diabetes, section 6 with references. (<http://www.nsamdiabetes.no/>)

to three times greater risk of dying from cardiovascular disease than the rest of the population.

1.10. Prevention and treatment of diabetes mellitus

Robust prevention programmes through general and high risk population strategies will enable prevention and delay of the disease for people at risk of Type 2 diabetes. Further, good treatment and secondary preventative measures prevent late-onset complications for both Type 1 and 2 diabetes. Patients can live longer with a better quality of life and with fewer late-onset complications if the disease is regulated using good lifestyle habits and medications. Improved lifestyle encompasses in particular increased physical activity, healthier diet and no smoking. Social differences in lifestyle are a particular challenge. When preventive measures are implemented it is important to realise that differences in lifestyle are not just a result of personal choice, but that social conditions also play a critical role. This means that measures must be designed so that it is easier to make the healthy choices. Other important measures are promotion of low threshold physical activity and healthy diet, targeting groups with a particularly high risk of developing the disease.

A national goal is to secure diabetes patients equality and quality of treatment. Studies indicate that there is currently variation in the extent to which patients achieve their treatment targets. Important measures to lessen the gap between treatment goals and goal achievement are: national

guidelines for diagnosing and treatment of diabetes; use of national medical quality registers for diabetes; and education of diabetes patients and carer/family.

It is essential for the primary and specialist healthcare services to enter a close collaboration in order to capture people who are at risk of developing diabetes, and to secure good systematic diagnosis and follow-up in all phases of the disease. Good cooperation between practitioners at the different service levels also has great impact on the treatment of people with diabetes. This does not always function satisfactorily today.

Good self-management is essential for people who have been diagnosed with diabetes mellitus. It is important that the healthcare services can support the individual patient, empowering them so that they can be independent and cope with life with a chronic disease. The patient must be seen as a resource able to manage their own life situation, and not as a passive recipient of services.

Diabetics can thus be the model for the new autonomous patient role in which learning and empowering are central elements.

1.11. How many people have diabetes mellitus in Norway?

It is estimated that between 90,000-120,000 people have been diagnosed with diabetes mellitus in Norway. But, there is currently not enough data on the incidence and development of the disease. International figures cannot be automatically transposed to Norwegian conditions. Furthermore, there is a large number of undiagnosed cases of Type 2 diabetes. Prevalence and development in Norway cannot therefore be accurately determined. One important aspect of the Strategic Plan for Diabetes is to increase knowledge on occurrence, development and other factors that would influence the choice of measures. At the same time, acknowledging the need for more information should not be allowed to diminish the challenges that exist.

2. A National Diabetes Strategy

2.1. Grounded in the Health Policy

When the budget proposal S.no.1 (2004-2005) was processed, the following resolution was carried:

“Parliament requests that the Government submits a National Plan for prevention, research and treatment of diabetes to Parliament during 2005.”

The Social Committee in Parliament had also pointed out the need to reduce sugar consumption, especially among children and young people, and that this should be seen in the context of the above-mentioned work³. The committee has also pointed out the importance of implementing effective and rational procedures to prevent and delay serious

³ cf Proposal S. no.165 (2004-2005)

late-onset complications, including loss of sight, and that particular attention must be directed at younger women with Type 2 diabetes, and pregnant women with diabetes. Work on a cohesive follow-up of diabetes was also discussed in the State Budget for 2006, St. prp. no. 1 (2005-2006).

Based on the health policy leads given, the Ministry of Health and Care Services submits that a National Diabetes Strategy, which contains clearly formulated goals for diabetes prevention, research and treatment, combined with establishing a national coordinator post, would be a good mechanism to achieve a comprehensive and proactive follow-up of the diabetes issue. The Strategic plan will be followed-up with concrete measures.

Central goals of the Diabetes Strategy are grounded in the Soria Moria Declaration⁴ and other relevant documents from the Health Authorities: follow-up of White Paper St.meld, no. 16 (2002-2003) *Resept foret sunnere Norge* (Prescriptions for a healthier Norway (Public Health Institute Notification)), NOU 2005: 3 *Fra stykkevis til helt. En sammenhengende helsetjeneste* (From the bricks to the whole. A seamless health service) (Wisløff Committee) and a new national strategy to prevent inequality in health.

⁴ In the Government's Soria Moria Declaration, emphasis is placed on access for each and everyone to good and equal healthcare services regardless of personal economy and place of domicile. Further, the collaboration between the hospitals and municipal services shall be strengthened. The Government will also focus more strongly on preventative work including targeting physical activity and diet

2.2. Background, target group and timeline

The challenges of diabetes can only be met by a national strategic plan. This requires measures within prevention, research, and primary and specialist healthcare services. Work regarding rehabilitation in diabetes must be structured. The central goals of the Diabetes Strategy are based on the implementation of targeted measures in these areas. There must also be a clear organisation that can underpin a holistic approach to the work. A key element of the Strategic Plan is that the Directorate for Health and Social Affairs is given a substantial coordinating role for the work on follow-up of the Diabetes Strategy. This will create a forum in which stakeholders can assess situations and challenges, generating the foundation for more coordinated and grounded measures.

The Strategic plan covers national goals, planned and/or initiated measures and in certain areas measures are mentioned for evaluation within prevention, diagnosis, treatment, rehabilitation and research. The purpose of the Strategic plan is to prevent people developing Type 2 diabetes, and to prevent or delay serious late-onset complications in those who already have the diagnosis.

One particular challenge at implementation of the Diabetes Strategy is to achieve good integration of diabetes specific measures with measures that are included in the general healthcare strategy, such as healthier diets and increased physical activity. These measures do not specifically target diabetes, but will have

impact in this area too. It is important that follow-up of the Strategic Plan is seen in context with general public health work. But it is crucial to ensure that the diabetes specific measures are given the necessary priority. In the coordinator function deployed to the Directorate for Health and Social Affairs, a key task will be to find a good balance between these two types of measures.

The Directorate for Health and Social Affairs has collated and prepared the professional basis for the Diabetes Strategy⁵. Specialist areas and the Norwegian Diabetes Association have contributed to this process. The Directorate's document contains a series of proposals for measures, and can act as an important foundation from which the stakeholders in public health work and the health and care services can evaluate the measures that should be implemented to achieve the goals defined in the strategic plan. The document is an appendix to the Diabetes Strategy⁶.

The target groups for the Diabetes Strategy are primarily stakeholders with responsibility within diabetes, hereunder the municipalities, GPs, the Regional Health Authorities and the Norwegian Institute of Public Health. The Directorate for Health and Social Affairs has been given the mandate of national responsibility for coordination of follow-up of the Diabetes Strategy, cf section 2.4

⁵ National Diabetes Strategy. Directorate for Health and Social Affairs professional foundation for follow-up of diabetes.

⁶ The attachment may be downloaded from the Ministry of Health and Care Services' website.

The Diabetes Strategy applies for the period 2006-2010. It will be integrated in the National Health Plan.

2.3. Primary purpose and primary action points of the Strategic Plan

The primary purpose of the Diabetes Strategy is to meet the challenges within diabetes in a proactive and cohesive manner, by facilitating improved quality, appropriate capacity and equality of accessibility and, in addition, appropriate organization and improved cooperation at all levels and between all areas of diabetes.

The primary action points of the Strategic Plan:

- Investment in prevention, both in general public health grounded in the Health Policy, and measures that target diabetes in particular.
- Systematic work for early identification of people with Type 2 diabetes so that appropriate measures can be put in place. Work targeting high risk groups is integral to the Diabetes Strategy.
- Systematic measures and monitoring to ensure that patients attain the treatment goals set, for example through implementation of national guidelines, including electronic diabetes forms, and use of National Medical Quality Registers for diabetes treatment.
- Collaboration with the voluntary sector and the professional organizations to improve realization of the measure goals.

- Organisational measures such as establishment of “Responsibility points” that shall monitor status, development and challenges within diabetes, and continuously review whether strategies and measures meet these needs and that measures indicated by follow-up and analysis are identified. This responsibility point shall also maintain the coordination tasks that are not grounded directly in the line systems. The Directorate for Health and Social Affairs has been appointed to this role. Assumption of this role by the Directorate does not change the responsibilities and powers of the institutions. The Norwegian Diabetes Association will be an important collaboration partner in this work.

2.4. Directorate for Health and Social Affairs as national coordinator

To secure improved coordination and more focussed efforts within diabetes, the Directorate for Health and Social Affairs has been given the role of national coordinator in the continued follow-up of the Strategic Plan⁷. A dedicated post will be created in the Directorate for Health and Social Affairs – Director of Strategic Planning

⁷ Letter from the Ministry of Health and Care Services to the Directorate for Health and Social Affairs of 13.01.2006. State budget 2006 – section 720 Directorate for Health and Social Affairs – allocation of funding section 6.10

Diabetes – that will have particular responsibility for this function. The purpose is to curate a cohesive follow-up within diabetes. Development and implementation of measures to achieve the objectives of the Strategic Plan shall follow defined responsibility structures.

The Directorate for Health and Social Affairs will have a special responsibility to establish necessary collaboration between appropriate stakeholders. This will entail creation of a follow-up group for the affected stakeholders. These may be decision-takers, and people from expert and user groups, hereunder the Norwegian Diabetes Association. The purpose of such a group is to establish an arena for experience exchange and knowledge transfer, and to facilitate that measures at the same service level and measures within the public health efforts, and the primary and specialist healthcare services, are seen in context. In addition, the Directorate for Health and Social Affairs shall monitor whether implementation takes place in compliance with the Strategic Plans milestones, and report to the Ministry of Health and Care Services if:

- the stakeholders have difficulties achieving the milestones
- the stakeholders do not get a firm hold on their collaboration responsibility
- implementation is dependent on new or changed national measures in other areas

Proposals from the Directorate for Health and Social Affairs shall be presented during the normal budget and planning processes, unless extraordinary circumstances dictate otherwise.

Steering requirements for follow-up of the Diabetes Strategy have been included in the remit document for 2006 to the regional health authorities, and in the deployment letter for 2006 to the Directorate for Health and Social Affairs. The steering message presupposes that the stakeholders in the public health and care services follow up their areas of responsibility, hereunder development and implementation of concrete measures to achieve the goals of the Strategic Plan.

2.5. Prioritisation

One central goal is the correct and, thereby, high prioritisation of diabetes given its current and increasing prevalence (refer to sections 1.1 and 1.8). The patients' rights as defined in the Act on Patient Rights⁸ and Directive on Prioritisation⁹ are key mechanisms to secure correct prioritisation. The right to a personal deadline by which specialist healthcare services must have been delivered, has strengthened the patient's position and is considered of particular importance for diabetics. Measures proposed implemented or strengthened must have appropriate scope seen from a cohesive prioritisation perspective. Funding to realize the goals of the Strategic Plan will be deployed through ordinary budget processes.

⁸ Act no. 63 on Patient Rights.

3. National objectives and measures

3.1. Preventive work

National objectives

- To reduce the number of new cases of Type 2 diabetes through healthier diet, increased physical activity and smoking cessation
- To reduce the risk of late-onset complications

Planned/initiated measures

- Follow up St.meld. no.16 (2002-2003) Resept for sunnere Norge (*Prescriptions for a healthier Norway* (White Paper))
- Follow up the *Action Plan for physical activity – Together for physical activity*
- Draw up an action plan for a healthier diet in the general population
- Implement the *National strategy for smoking cessation 2006-2010*
- Implement measures to reduce serious overweight, including development of treatments for pathologically overweight and draw up and implement professional guidelines for treatment and follow-up of overweight in the primary healthcare services

Measures to be evaluated

- Conducting an aggregated review of the need for lifestyle and low-threshold programmes
- Evaluation of the need to draw up and implement high risk strategies with general measures and measures targeting individual people

3.1.1. Prevention of diabetes

The challenges to be met by the primary preventative health efforts in diabetes coincide to a great extent with prevention of other lifestyle-related diseases. The same mechanisms must be implemented. Therefore the measures in preventative work have been designed for general application. It is thus important that primary prevention of Type 2 diabetes is seen in conjunction with the Action Plans for Physical Activity and Healthier Eating in the General Population that are in preparation. The measures integral to these action plans will, importantly, delay the development of Type 2 diabetes and delay late-onset

complications for both Type 1 and 2 diabetes. Particular attention is paid to measures targeting the population as a whole, but also to measures targeting special groups. High risk strategies are discussed in section 3.1.6.

Currently, Type 1 diabetes cannot be prevented because we do not know the causative factors that trigger the disease. Changes in lifestyle can reduce the prevalence of Type 2 diabetes and prevent and delay late-onset complications for both Type 1 and Type 2 diabetes. There is well-documented evidence for a correlation between obesity and the risk of developing Type 2 diabetes. The incidence of obesity is increasing in Norway in all age groups.

Studies demonstrate that a body mass index (BMI) greater than 27 gives increased mortality and that the risk of developing the disease increase with increasing obesity. The cause of increasing obesity in the Norwegian population is closely linked to the falling levels of physical activity relative to the intake of calorie rich foods. Measures to prevent overweight and obesity will be essential. The most important strategic plan will therefore be to foster a lifestyle that encourages physical activity and healthy eating, and reduces smoking.

3.1.2. Social inequality in health

There are significant social differences with respect to knowledge on healthy eating, physical activity and smoking and awareness of what this means for one's health. Reducing social differences is thus an important goal in the work to prevent diabetes. Work is ongoing to make taking the healthy choices easier and to raise the population's knowledge on what affects our health.

3.1.3. Physical activity

Regular physical activity provides important physical, mental and societal health advantages which protect against disease and troublesome conditions. We also know that individually tailored physical activity is important in prevention of sequela, in treatment of a range of diseases and conditions, and in rehabilitation after illness/injury. The foundations for good exercise habits and good health during one's entire life, are laid in childhood and adolescence. The greatest challenge is to provide opportunity for varied and enjoyable play and physical activity for children

and youngsters that will stimulate increased physical activity in groups that are too sedentary.

Social differences exist with respect to activities and activity levels. A considerable challenge lies in promoting physical activity among children and young people and in groups that are too sedentary. The proportion of physically inactive people is highest in groups who are most disadvantaged both from a societal and health perspective. As a follow up to St.meld. (White Paper) no. 16 (2002-2003) *Prescriptions for a healthier Norway*, an inter-ministerial action plan has been drawn up for physical activity – *Together for physical activity*. This action plan will be in effect during 2005-2009 and includes mechanisms and measures that will be the responsibility of eight ministries. Using a broad-based collaboration at all administrative levels, the goal is to contribute to:

- Locally based low threshold activities and good opportunities for physical activity in leisure time and in important arenas such as kindergarten, school and the work place
- Activity-promoting residential areas, and local communities that encourage physical activity and accommodate accessibility for everybody. This must be secured in the normal area and community planning and in planning of recreational areas
- Motivate an active lifestyle through robust guidance and follow-up in the healthcare services, population based information and attitude shaping work.

There is a need to strengthen the efforts and focus on groups with special facilitation needs who are not easily identified by the general population-based and structural mechanisms. In the continuing follow-up, emphasis will therefore be placed on measures that promote development of locally-based low threshold activities and which reflect the experiences accumulated from the work in the Oslo suburb of Romsås. In addition, emphasis shall be placed on competence building of healthcare professionals and others whose work covers information programmes targeting children and young people.

3.1.4. Diet

Diet is an important element in the prevention of Type 2 diabetes. In general, large numbers of the population eat too much fat, sugar and salt and too little wholegrain bread, vegetables, fish and fruit. One particular challenge is to reduce the sugar consumption among children and young people. Recently, the consumption of sugary drinks has dropped and many schools have installed water fountains to bring consumption down even further. The increasing occurrence of Type 2 diabetes and the prognoses that predict continued growth has resulted in the preparation of an inter-ministerial action plan to improve diet in the general population. This will be an important aspect of preventative work because diet is highly important in both the prevention of diabetes and in the delay of serious late-onset complications. The plan will be concluded in 2006 and

implemented from 2007. Important elements of this plan will be:

- Implementation of measures for dissemination of information on nutrition and health directed at the general population and specific groups
- Facilitation of healthier food in the workplace, in schools and kindergarten
- Evaluation of measures to improve accessibility, diversity and quality in food production, including price and tax mechanisms
- Evaluation of measures linked to diet and health as part of an education programme for health professionals, teachers and other relevant professional groups
- Strengthening clinical nutrition in the healthcare services: in antenatal care, in health stations, in school healthcare services, nursing and care services, non-specialists and GPs and the specialist healthcare services. A particular challenge is to find sound organisational solutions for grounding nutritional competence in the municipalities
- Research on measures to promote a healthy diet including effective ways to change behaviour
- Regular review of diet and diet-related health and disease indicators in the general population.

3.1.5. Tobacco

It has been recognised since the 1980s that smoking can increase the risk of Type 2 diabetes, and the evidence for this is increasing. Tobacco has a

generally negative effect on health and is an acknowledged risk factor in development of disease. A smoking cessation policy must be directed at reducing the numbers who smoke every day, limit recruitment of first time smokers and prevent passive smoking. It is a national goal that the numbers of young smokers shall be halved within five years (2003-2007). The long term vision is a tobacco-free generation of young people. Many programmes are available for smoking cessation, including Røyketelefonen, (telephone helpline) training of course leaders and “stop smoking” courses. Reference is also made to the *Nasjonale strategier for det tobakksforebyggende arbeidet 2006-2010 (National Strategy for the Smoking Prevention Programme 2006-2010)*. One expressed wish is to invest even more heavily within the healthcare services in prevention of ill-health from smoking, hereunder:

- Strengthening the healthcare services' role and involvement in smoking cessation
- Implementing education of appropriate healthcare personnel in antenatal care and in the health clinics and school healthcare services

3.1.6. *High risk strategies in preventative work*

From a public health perspective, it is extremely advantageous to identify people at high risk of developing Type 2 diabetes. These could be people with reduced glucose tolerance or who are overweight or obese. The primary healthcare services are an important arena for most of the high risk strategies because it is here the majority

of these cases will be detected. The non-specialist services/GPs therefore have an important role to play in the first follow-up. It will often be possible to apply the *Grønn resept* (Green prescription) programme and follow-up activities to this target group. Weight loss will be a core element. Public health low-threshold programmes with emphasis on physical activity and access to nutritional advice are appropriate measures.

The new action plan on diet in the population will review whether there is a need to strengthen dietary advisory services for the general population under the auspices of the healthcare services.

Shaping local services should be seen in conjunction with access to training and empowering centres. It could be necessary to review the need for diverse lifestyle and low threshold programs under the same umbrella.

One of the most crucial tasks of the new coordinator post in the Directorate for Health and Social Affairs will be to draw up a high risk strategy that covers both general measures and those targeting individuals. This work must be integrated in the budget processes.

Senior citizen centres, company healthcare services and pharmacists can be important arenas in addition to non-specialist doctors, health clinics, school healthcare services and the specialist healthcare services in providing information about risk factors and advice on preventive measures. The Norwegian Diabetes Association could also be a major contributor of information on risk factors and

symptoms through the website diabetes.no, the advisory service Diafonen and other information programmes.

3.1.7 Partnership for local public health work

The Government will strengthen prevention in the widest sense, and places emphasis on political steering and partnership with all building powers in counties and municipalities. The goal is to promote the health and quality of life of the individual. The government will therefore follow up St.meld. (White Paper) no. 16 (2002-2003) *Prescriptions for a healthier Norway*, which defines the directions of the public health work and gives it a stronger local and democratic grounding.

In 2004, a provisional stimulation scheme was established for counties and municipalities to develop a permanent "infrastructure" for public

health work. The county municipalities, as the regional development stakeholder, have taken the leading role in the regional partnership for general public health in which regional state bodies, regional health authorities, university colleges and voluntary organisations participate.

Stimulation by the State presupposes that counties and municipalities contribute with own resources and that the work is grounded in the county and municipal planning systems. The funds will go primarily to strengthen and support a cohesive public health programme in the municipalities. Development of low threshold programmes intended to change health lifestyle behaviour is appropriate measure. So far, 16 counties and a large number of municipalities within these counties are involved. The goal is the inclusion of all counties and municipalities in these programmes.

3.2. Diagnosis

National objectives

- Develop methods and routines to identify people at high risk of developing Type 2 diabetes
- Reduce the number of people with undiagnosed Type 2 diabetes

Planned/initiated measures

- Underpin further implementation of the Norwegian College of General Practitioners (Norsk selskap for allmenntmedisins (NSAM)) action program for diabetes in general practices
- Draw up and implement national professional guidelines for diagnosis and treatment of diabetes within the specialist healthcare services

Measures to be evaluated

- Review of measures to stimulate non-specialist doctors including doctors working in health clinics, school healthcare services and company healthcare services to become familiar with NSAMs action program for diabetes in general practices
- Review of measures to stimulate competence building of personnel working in doctors surgeries, company healthcare services, health clinics and school healthcare services, etc., so that they can be alert to and can continue to work with symptoms in people who could be at risk of developing Type 2 diabetes

The national goals for diagnosis and treatment are separated in this Strategic Plan, even though in practice they are interlinked. This is because a large number of people most probably have undiagnosed Type 2 diabetes, and because early diagnosis and rapid start up of treatment can significantly prevent and delay serious late-onset complications. Reference is also made to the many with reduced glucose tolerance who thus are in danger of developing diabetes, cf. health study conducted by HUNT Research Centre¹⁰.

The primary healthcare services are central to diabetes care in many fields: primary prevention, detection of symptoms, identification of people at risk, implementation of treatment, follow-up, and prevention of late-onset complications. The non-specialist doctors see patients with a wide range of symptoms and illnesses, most of which are not signs of serious disease. This also applies to people with Type 2 diabetes who may present with few symptoms in an early phase.

¹⁰ Midthjell, Platou C, Skrove A. Urovekkende høy forekomst av uopptaget type-2-diabetes og nedsatt glukosetoleranse hos voksne i Nord-Trøndelag. (Disturbingly high frequency of undiagnosed Type 2 diabetes and reduced glucose tolerance in adults in Northern Trøndelag)

Norsk Epidemiologi 2005;15 (Supplement1), 30. Also cited in "Flere diabetikere enn antatt" (More diabetics than assumed), published on the Norwegian Institute of Public Health website www.fhi.no

The risk factors for developing Type 2 diabetes have been known for many years, but systematic mapping in individuals is not performed to any great extent in Norway. The methods used for diagnosis are however well-proven and established. In this context, reference is made to the Norsk selskap for allmenntmedisin (Norwegian College of General Practitioners, hereafter referred to as NSAM) action programme for diabetes in general practices, cf. discussion in section 3.3.

The NSAM action programme/clinical guidelines do not recommend general screening for diabetes. However, it is emphasised that active searching based on broad indications should be carried out in the primary healthcare services. Many countries have drawn up national plans for prevention, research and treatment of diabetes; including Finland, Denmark, Austria, United Kingdom, Australia and Germany. Finland currently has an ongoing, exhaustive, development programme (2000 – 2010) for prevention of diabetes, including a programme for prevention of Type 2 diabetes. The latter includes a strategy for identifying people at risk of developing Type 2 diabetes. One mechanism useful in this context is a form to calculate the degree of risk for developing Type 2 diabetes. The risk evaluation sheet has also been used by NSAM as part of the clinical guidelines

on diagnosis. The risk factors mapped are linked to age, weight, body mass index, waist circumference, physical activity, intake of fruit/vegetables, use of anti-hypertension medication, blood glucose levels and a family history of diabetes.

By encouraging doctors in the primary healthcare services to become familiar with the NSAM action programme, and to disseminate knowledge to colleagues at doctors' surgeries, health clinics, school and company healthcare services, etc., greater attention can be directed at people in high risk groups. When people attend a doctor's appointment or company health service, for reasons other than suspicion of Type 2 diabetes, the healthcare professional will have a better base to provide follow-up/information on lifestyle, etc. Many preventive measures targeting diabetes specifically will be common to the treatment program for people with Type 2 diabetes (cf. section 3.1.6 High risk strategies in prevention work). Follow-up can also serve as a mechanism to identify people with undiagnosed Type 2 diabetes.

Many who develop Type 2 diabetes are elderly people. The Senior Citizen Centres are therefore a potential arena for identifying where help is needed, but this presupposes that they have the competence and training necessary.

3.3. Treatment and secondary prevention

National objectives

- Treatment and secondary prevention of diabetes shall be appropriately organised, be of high quality and be equally accessible
- Rational and appropriate cooperation between the primary healthcare services and the specialist healthcare services shall be secured

- Satisfactory secondary preventive measures for people with diabetes mellitus shall be secured

Planned/initiated measures

- Secure good lifestyle advice for people with Type 2 diabetes
- Follow up and further develop the *Grønn resept* (Green prescription) scheme
- Underpin further implementation of the NSAM Action programme for diabetes in general practices
- Draw up and implement professional guidelines for diagnosis and treatment of diabetes within the specialist healthcare services
- Underpin further implementation of NOKLUS Diabetes profile
- Ensure that *Guidelines for antenatal care* are applied
- Secure professionally updated and sound clinical knowledge on diabetes treatment by using the National Medical Quality Registers for children and adults
- Draw up cohesive strategies for development of local hospital functions and develop seamless treatment chains, etc., cf. remit documents for 2005 and 2006

Measures to be evaluated

- Review of the organisation and need for strengthening the scheme for interdisciplinary diabetes teams

3.3.1. Treatment

Early diagnosis, good treatment and secondary prevention secure better quality of life, a longer life and fewer late-onset complications for people with diabetes mellitus. The most important elements of treatment are patient education, self-management and medications. Many people with Type 2 diabetes control their blood glucose satisfactorily using tablet medications and lifestyle changes. Later in the progression of the disease, an increasing number will require supplement with insulin. In Norway today, around 60,000 people use insulin¹¹. For people with Type 2 diabetes a suitable diet, physical activity and smoking cessation are also important. Own efforts and the ability to

take care of oneself are deciding factors in the progress of the disease for people with Type 1 and Type 2 diabetes.

80-90 percent of children and young people with Type 1 diabetes go for check-ups at paediatric outpatients in the specialist healthcare services, while adults who go for check-ups in the specialist healthcare services are primarily followed up at internal medicine outpatient clinics. Most Type 2 diabetics go for check-ups at non-specialists/GPs. Many people with diabetes have complex and complicated diseases or they have developed late-onset complications. These may need follow-up from the specialist healthcare services. In these cases, follow-up in interdisciplinary diabetes teams would be important, cf. discussion in section 3.4.2. For treatment and follow-up of diabetes patients, it is crucial that there

¹¹ Journal Nor Lægeforen. no 6, 2006;126-128.

is good cooperation between the primary healthcare services and the specialist healthcare services.

For this patient group, some sections of legislation will be of particular importance. Diabetes patients requiring long-term and coordinated social and healthcare services have the right, if they so wish to exercise it, to have an *individual care plan*, drawn up¹². The individual care plan shall help to ensure that the patient receives a cohesive, coordinated and individually adjusted services plan. The patient has the right to participate in the preparation of their individual care plan and this shall be facilitated.

All patients have the right to *involvement* during treatment, hereunder the right to be involved in the choice between and administration of, available and appropriate examination and treatment methods, cf. Act on Patient Rights § 3-1. Achieving good treatment processes with true user involvement is conditional on the patient being perceived as a premise supplier, and on the person being furnished with adequate and easy to understand information about the disease and treatment.

The hospital shall also appoint a *contact doctor for the patient* as soon as possible after admission or outpatient pre-examination, unless this is clearly not necessary, cf. directive on contact

¹² cf. Act on Patient Rights § 2-5, Act on the Social Services § 4-3a, The Act on the municipal health services § 6-2a, the Act on specialist healthcare services § 2-5 and the Directive on the individual care plan § 4.

doctors¹³ § 3, cf. Act on the specialist healthcare services¹⁴ § 3-7. The contact doctor shall be the patient's dedicated medical contact during their stay in hospital, cf. Directive § 4.

3.3.2. *Secondary prevention*

By secondary prevention is understood the treatment of people, who have received the diagnosis diabetes mellitus, to prevent them developing late-onset complications of the disease.

Food and drink habits and degree of physical activity are of great importance in blood sugar regulation, and for development of late-onset complications in Type 2 diabetics. It is therefore important that people at risk, or with newly diagnosed Type 2 diabetes, receive individually tailored guidance on diet and exercise. The *Grønn resept* (Green prescription) scheme is intended to stimulate GPs to give more advice on diet and physical activity, in part through a dedicated fee, and to reduce the use of medications. The purpose is to turn the focus *from* medication *to* self-management and help to change lifestyle where this is medically appropriate. At the same time, we see that the combination of medication and lifestyle change, physical activity and diet is in many cases the determinant for a good result in Type 2 diabetics.

The *Grønn resept* (Green prescription) scheme covers two elements; fee in accordance with the standard fee for

¹³ Directive of 1 December 2000 no. 1218 on contact doctors, etc.

¹⁴ Act of 2 July 1999 no. 61 on the specialist healthcare services, etc.

doctors and educational materials for use at consultations, and for follow-up of the patient in the form of an individually tailored program for diet and/or physical activity. During the 2003 fee negotiations, the fee for green prescriptions was delimited to the diagnoses high blood pressure and Type 2 diabetes. This fee is applied only when the green prescription is prescribed as an alternative to medication. It is however important to point out that the subject information material for the doctor and writing of green prescriptions can be used for *all* patients with lifestyle related diseases that are assessed as benefiting from lifestyle advice. The scheme is undergoing development and review. The first part of the review was conducted in the first half of 2005, and concerned the doctors' understanding of and experiences with the scheme. The review revealed some weaknesses. In addition, there is a need to develop further the professional tool that the doctors use.

Work is ongoing to test out various types of follow-up programs for patients that have been prescribed a green prescription. This is intended as follow-up that the patient can be referred to, either with voluntary organizations and/or private bodies in collaboration with the GP or other sections of the healthcare services. This trial is being conducted in several municipalities within four counties. The review will provide the basis for assessing how to deliver the best possible follow-up for the patient.

3.3.3. *Follow-up of diabetes in pregnancy*

Pregnant women with diabetes, or who are at risk of developing diabetes, must be followed throughout the entire pregnancy. The Directorate for Health and Social Affairs has drawn up *Faglige retningslinjer for svangerskapsomsorgen 2005 (Professional guidelines for antenatal care 2005)*. This recommends that midwives and GPs check whether pregnant women in certain risk groups have diabetes, and applies to women older than 38, women with a family history of diabetes, women who are overweight, and women who have had pregnancy-related diabetes previously or whose ethnic origins are the Indian subcontinent or North Africa. The Directorate for Health and Social Affairs works in collaboration with the Nasjonalt råd for fødselsomsorg (Norwegian National Advisory Committee for Maternal Care) on implementation of the guidelines.

3.3.4. *National professional guidelines*

To achieve equality of treatment and good quality in diabetes care, and to prevent late-onset complications, it is essential to have good routines that systematise knowledge and standardise practice.¹⁵

The NSAM action programme for diabetes in general practices is used today by around 52 % of GPs. The

¹⁵ In the statement from the Directorate for Health and Social Affairs reference is made to the investigations into the quality of diabetes care in general practice. They conclude that: "there is reason to believe that there is considerable variation in quality of treatment between the various general practices."

programme is comprehensive and contains a series of recommendations on diagnosis, investigation, treatment, prevention and follow-up of people with diabetes. The Directorate for Health and Social Affairs believes that these clinical guidelines will largely achieve good systematics in diabetes care. The action programme can also be a mechanism to secure necessary cooperation between service levels. Using the programme as a starting point, procedure files can be prepared for diagnosis, investigation and follow-up including assignments and responsibility division between professional groups and service levels. A prerequisite is that the Directorate, in collaboration with NSAM and other stakeholders, works to implement the action programme at all GP practices.

During the work with the action programme, NSAM is collaborating closely with the Norwegian Quality Improvement of Primary Care Laboratories outside the hospitals (hereafter NOKLUS)¹⁶. The primary purpose of NOKLUS is to improve the quality of laboratory operations outside the hospitals. NOKLUS has, in collaboration with NSAM, created an electronic database form based on the action programme. The form with guidelines is an appendix to the electronic patient record and acts as a checklist for necessary activities. Here, the GP can record laboratory data, complications and initiated measures. The electronic diabetes record is considered to be a useful tool in

¹⁶ NOKLUS is a collaboration scheme between the Ministry and the Norwegian Medical Association, and is financed through the Norwegian Medical Association Quality Improvement Fund III which receives funds from the normal annual fee negotiations.

securing necessary follow-up of the patient and annual checkups.

A cohesive and systematic follow-up of people with diabetes mellitus is essential because of the complexity of the disease. The Directorate for Health and Social Affairs has therefore been given the remit to draw up professional guidelines for diagnosis, treatment and follow-up of this patient group in the specialist healthcare services. This can only be achieved in close collaboration with all affected stakeholders.

3.3.5. *Quality assurance*

There is ample evidence that systematic follow-up of people with diabetes produces better treatment results¹⁷. The electronic diabetes form based on the NSAM action programme is also the basis for a subproject under the NOKLUS Clinic, *NOKLUS Diabetes profile*. The Diabetes profile is based on completion of the electronic diabetes form. In addition to installation of software with user instructions and user support, the project provides feedback to GPs on status and target achievement for their diabetes patients. This could be the percentage that receives foot examinations or the percentage that achieves target goals for long-term blood glucose (HbA1c) or blood pressure. Thus, the doctor can follow the diabetic patient over time and see the effect of the follow-up measures. Feedback is also given as comparison of the doctor's patient data with other doctors' data. In addition, pedagogic

¹⁷ Gaede, P. et al. (2003) Multifactorial intervention and cardiovascular disease in patients with type 2 diabetes. In *New England Journal of Medicine* Jan 30;348(5):383-93.

material will be developed for use in colleague groups and post-education with the aim of improved practice. As of May 2006, the electronic diabetes form has been installed at around 140 GP surgeries. NOKLUS has sent an invitation to all GPs to become members of *NOKLUS Diabetes profile*, and has this as their goal. The *NOKLUS Diabetes profile* is also an integral part of the preparations for a Diabetes Register for adults that will be an important aid in improving care.

Knowledge generation and competence building within diabetes must be a continual ongoing process. The Eastern and Western Regional Health Authorities have established National Medical Quality Registers for diabetes disease among children and adults respectively. A register for diabetes disease in children has been established by the Eastern Regional Health Authority. NOKLUS has been given the task by the Western Regional Health Authority to set up and administrate the

register for adult patients. The register will receive data from the electronic diabetes forms.

Research based on patient data in the registers will be of crucial importance for quality improvement in patient treatment and for shaping health policies. To facilitate these processes, work has been initiated to make the Norwegian Patient Register personally identifiable. Currently, data from the register is used primarily as decision-taking support for administration and funding of the specialist healthcare services. A personally identifiable patient register will expand application to include epidemiological and clinical research and form the basis for disease and quality registers. The change proposals were presented in Ot.prp. no.49 (2005-2006) *Om lov om endringer i helseregisterloven (norsk patientregister) (On the Act on changes to the Act on the Health register (Norwegian Patient Register))*.

3.4. Rehabilitation

National objectives

- Rehabilitation services will be strengthened
- Improved cooperation between the primary and specialist healthcare services

Planned/initiated measures

- National strategy for strengthening the health and social services sections of the rehabilitation and habilitation services (the Rehabilitation Plan)
- Follow-up of NOU 2005: 3 *Fra stykkevis til helt (From the bricks to the whole)*
- Implementation of *Opptrappingsplanen for psykisk helse 1999-2008 (The Escalation Plan for Mental Health 1999-2008)*
- Implementation of the National Strategic Plan for IT development *Samspill 2007 (Te@mwork 2007)*

Measures to be evaluated

- Review the organisation and strengthening of the scheme for interdisciplinary diabetes teams, hereunder assessing various models of diabetes teams and the need to establish a permanent contact between the diabetes teams and the primary healthcare services

3.4.1. Rehabilitation

Rehabilitation can be defined as “*time delimited, planned processes with clear goals and mechanisms in which several stakeholders collaborate to provide the necessary assistance to the user’s own efforts to achieve the best possible function and empowering skills, independence and participation, socially and in society*”¹⁸. Rehabilitation covers training of physical functions and skills, mental coping and social adaptation for school and working life. Within diabetes, rehabilitation also includes training to cope with having a chronic illness and to cope in the best possible way after a late-onset complication, such as foot amputation or blindness. Learning to cope with a chronic illness comes under the Training and Empowerment centres. Preparation of a collective strategy plan for rehabilitation is underway. One goal is the identification of rehabilitation needs in diabetes and inclusion in the overall strategy plan.

3.4.2. Diabetes teams

Good diabetes care demands a multi-disciplinary approach and close collaboration between the specialist groups. Experiences with multi-disciplinary diabetes teams are excellent. Many hospitals have established

diabetes teams comprising doctor and nurses. Some teams also have clinical nutritionists, physiotherapists, psychologists and podiatrists attached to them. Some also have regular contact with an ophthalmologist. To strengthen the cooperation between the service levels, it is necessary for the interdisciplinary teams at the outpatient clinics to have contact points in the municipal healthcare services, such as in home care or at the GPs. Appropriate tasks for the home care services, apart from the follow up of medical treatment, could be to prevent diabetic foot sores, provide dietary advice and raise awareness of the advantages of physical activity. The GPs should be able to network with resource personnel at the outpatient clinic.

Further development of variants of the diabetes teams and models of cooperation will be crucial to improve the overall services delivered.

3.4.3. Cooperation between the primary and specialist healthcare services

For people with a chronic illness such as diabetes mellitus, it is extremely important that collaboration between the service levels function to deliver a seamless and cohesive service. This applies in particular to patient groups with complex diseases and health challenges, e.g. children and young people with additional diagnoses

¹⁸ St.meld.(White Paper) no 21 (1998-1999) Ansvar and meistring. Mot ein heilskapeleg rehabiliteringspolitikk (Responsibility and Empowering. Towards a holistic rehabilitation policy)

(section 1.6). Successful treatment programmes are dependent on good coordination between healthcare groups and between healthcare service levels.

Improved cooperation between the primary and specialist healthcare services is a complex issue requiring several action programmes. The regional health authorities have been given the remit to implement cohesive strategies for closer collaboration in the primary healthcare services. In addition they are working towards decentralisation of sections of the specialist healthcare services, including expanding local hospital functions, and preparation of treatment chains. A proposal has been drawn up for new organisational collaborations within and between the service levels¹⁹. The Ministry of Health and Care Services is working on development of a supreme agreement system between the state and the municipalities and, additionally, follow-up of agreements between health authorities and municipalities. Systematic use of patient experience will be a central aspect of the agreement system. The goal is improved framework conditions for cooperation between first and second line services. This is part of the follow up of NOU 2005: 3 *Fra stykkevis til helt. (From the bricks to the whole)*. The work to strengthen cooperation will be followed up through the normal decision-taking systems.

In recent years, processes have been instigated for better use of ICT in

¹⁹ Cooperation between municipal health and care services/regular GP scheme and the specialist healthcare services, Concluding Report June 2006: Ministry of Health and Care Services.

securing cooperation in the health and social care sectors. This has resulted in *Samspill 2007 (Te@mwork 2007)*, which is the national strategic plan for IT development in the health and social care sectors during 2004-2007. The Directorate for Health and Social Affairs leads the work with the strategic plan which has two primary targets; Good information flow and Electronic collaboration with new stakeholders. The Strategic Plan shall prioritise cohesive and well-defined information bases, the Norwegian Health Network, information security, electronic patient records and shall consolidate expansion of electronic message exchange, professional support and data sources. Important investment areas for electronic collaboration are involvement of patients/users and carer/family, electronic prescriptions for pharmacies and prescription support, and electronic collaboration between municipal health and social services and the specialist healthcare services. A municipal program has also been outlined for electronic collaboration that will give closer and better collaboration between the primary and specialist healthcare services.

3.4.4. *Mental health*

Living with diabetes mellitus can be a heavy burden. Many suffer from psychological sequela such as eating disorders, difficulty in coming to terms with being chronically ill and obsessive-compulsive behaviour. Good and holistic diabetes care must necessarily focus on the person's mental health. Strengthening the services delivered in mental health, hereunder implementation of *Opptrappingsplanen*

for psykisk helse 1999-2008 (The Escalation Plan for Mental Health), is a prioritised task

3.5. Education of patients and carer/family

National objectives

- People with diabetes and their carer/family shall be offered adequate training
- Pregnant women with diabetes shall be secured qualitatively good follow up during pregnancy, birth and the postnatal period

Planned/initiated measures

- Develop further education of people with diabetes and their carer/family at the Training and Empowerment centres

Diabetes is one of the chronic diseases for which good self-management is a prerequisite for successful treatment. Self-management demands good insight into one's illness and presupposes the information necessary. Training of patients and carer/family is one of the hospitals' primary tasks – in addition to treatment, education and research (Act on the Specialist Healthcare Services § 3-8).

The regional health authorities are obligated to implement measures to educate patients and carer/family in all health enterprises (steering document for 2004 and remit document for 2005). This has resulted in the founding of more than 35 Training and Empowerment centres²⁰, which together offer around 40 education programmes to people with diabetes mellitus. To underpin this excellent development, the regional health authorities must ensure that satisfactory secondary preventive measures exist for the major disease groups (remit document for 2006). This includes people with diabetes. In addition,

patients are offered individual consultations with healthcare personnel that cover check up of disease progression, mutual exchange of information and education.

Through NOKLUS, work is carried out on quality assurance of equipment for self-measurement of blood glucose and quality improvement of blood glucose measurements in diabetics. Studies conducted by NOKLUS reveal that less than half of those using self-management receive any instruction. An organised training programme is necessary that includes checking measuring equipment, measuring and interpretation of the results. This is something NOKLUS could assist with.

The voluntary sector is a major resource for the diabetic and their carer/family. The Norwegian Diabetes Association provides information, sound advice and practical help and support. The Government's general attitude is that in many areas the voluntary sector is important contributor, and a desired supplement, to public services. The government will therefore facilitate continued good conditions for the non-

²⁰ As of April 2006.

commercial services delivered by the voluntary sector, including within diabetes.

3.6. Personnel – capacity and competence

National objectives

- Develop current systems for dimensioning and content of foundation education, pre-registration training, further education and post-education to ensure adequate capacity and competence of healthcare professionals at all level of diabetes care

Planned/initiated measures

- In 2006, the regional health authorities have been given the remit of ensuring correct quantitative and high qualitative programmes in education and competence development for healthcare professionals that have the health regions as their practice arena or place of work
- Set requirements to maintain and establish the appropriate number of educational positions for doctors under specialisation
- In 2006, the regional health authorities have been given the remit to plan further education of personnel to meet current and future challenges

The healthcare services most important resources are the personnel. The patients are totally dependent on their empathy, ability to communicate, competence and skills. Maintaining and developing relevant competence is therefore a key element in the quality assurance of patient treatment.

Medical and technological developments demand continuous update of competence in order to ensure the high quality of services delivered and execution of profession. This responsibility rests on all stakeholders delivering healthcare services in the primary and specialist healthcare services. Individual healthcare professionals also have to assume this responsibility, whether they work

privately or are employed in the healthcare services²¹.

The National Committee for Specialist Education of Doctors and Placement of Doctors is responsible for monitoring developments in the doctors' job market, and provides advice to the Ministry of Health and Care Services on the need to establish education positions and consultant posts within the various specialities in each region²².

Many of the larger professional groups have established further and specialist education that covers diabetes mellitus. The Norwegian Nurses Organisation offers in-depth studies within diabetes

²¹ Refer to the Act on municipal healthcare services §§ 1-1, 2-1 and 6-3, the Act on specialist healthcare services §§ 2-2- and 3-10, and the Act on healthcare professionals §§ 4 and 16.

²² Refer to the Directive on specialist approval of healthcare professionals § 5, cf the Act on specialist healthcare services § 4-2.

as part of nursing specialisation studies. In addition, a further education programme in diabetes has been established at Bergen University College. Since 2001, around 80 students have completed the course. In 1984, studies within endocrinology were established as a subspecialty of internal medicine. Currently, around 80 doctors have been approved as specialists within this area. Every year specialist education in general medicine offers courses in diabetes that are approved as part of the re-certification scheme.

There are also in-depth studies in diabetes for more specialised fields such as clinical nutritionists and podiatrists.

Regular competence building is also required. The Norwegian Diabetes Association is a major contributor in this area organising the specialist conference, *Diabetesforum*. Arranged biannually, it presents an interdisciplinary agenda attracting hundreds of participants from the most relevant professional groups.

3.7. Research and development

National objectives

- Strengthen research into diabetes

Planned/initiated measures

- Strengthen research in the regional health authorities
- Strengthen research into chronic diseases, including diabetes mellitus, funded by the Research Council of Norway

Research into diabetes is essential to build up a database from which we can meet the challenges within diabetes in the best possible way. This includes research into preventive measures, epidemiological studies, healthcare services research and clinical patient-targeted research. Strengthening research within health has been promoted as a national goal²³. Yet, Norway has fewer research programmes within medicine and health-related areas than countries it is natural to compare ourselves with.

Diabetes research is conducted under the auspices of the regional health

authorities, at universities and the Norwegian Institute of Public Health. Prevention, baseline, clinical and epidemiological research are currently prioritised. The Norwegian Institute of Public Health has initiated research projects to identify environmental causative factors for Type 1 diabetes. It is necessary to strengthen research that ensures transfer of knowledge between baseline and clinical research (translation research) – and integration of knowledge in clinical practice. The regional health authorities have been given a particular responsibility in this area. Furthermore, work is ongoing to find a structure that accommodates how professional development and research within general medicine on the premises of general medicine can be organised and funded. In the autumn of

²³ Cf St. meld. (White Paper) no 20 (2004-2005) *Vilje til forskning* (The will for research) and the Soria Moria Declaration

2006, the Directorate for Health and Social Affairs will, in collaboration with the universities and the Norwegian Medical Association, start planning to establish four general medicine research units.

Reference is also made to the established medical quality registers that will be important contributors to strengthening knowledge growth in this area. Overall, this will be a significant contribution to increased research activities into diabetes.

The Research Council of Norway programmes for 2006-2010 will strengthen research into people with chronic diseases, including diabetes mellitus. These will cover both epidemiological research into prevention and causes of chronic diseases in *Program for folkehelse (Programme for Public Health)*, and patient-targeted clinical research in primary and specialist healthcare services through the *Program for klinisk forskning (Programme for clinical research)*. Patient progression and cooperation between service levels are important for people with diabetes, and are a particular investment area in a new programme for *Helse- and omsorgsforskning (Health and Care Research)*. This programme will also contribute to underpin health economics research in Norway.

Within the voluntary sector, the Norwegian Diabetes Association is promoting further diabetes research in Norway by arranging national conferences on diabetes for researchers and scholarship recipients. These conferences foster valuable networks

and competence that will be important in the continuing work.