



NDF Care Standard

Transparency and quality of diabetes care for
people with type 2 diabetes

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Foreword

Dutch healthcare is undergoing fundamental dynamic changes. The introduction of the new Health Insurance Act provided all market actors with the opportunity to create new initiatives. The patient is being asked to choose between various health insurance companies and care providers. Care providers, in turn, are being stimulated to differentiate themselves from competitors by tailoring the care they provide to market demands, and (re)organising care processes to achieve maximum efficiency. Health insurers can enter into selective contracts with care providers with the goal of obtaining affordable, high-quality care. A condition for making correct choices from the healthcare offerings, based on rational arguments, is that all parties have access to independent and reliable information about the quality of care. To date, this information has been lacking, leading to parties making choices based on arguments other than quality of care. This lack of information may also lead to more or less unnoticed quality differences between care providers.

In its Policy Plan for 2006-2010¹, the Netherlands Diabetes Federation (NDF) noted that its NDF Care Standard plays a central role in realising good diabetes care by guiding the content and organisation of care. The continuously evolving and growing demands for care, the increasing complexity of science and technology, changing insights into behaviour and lifestyle, aging populations, new treatment methods and changes within Dutch healthcare demanded revision and completion of the 2003 Care Standard. This updated Care Standard continues to give the person with diabetes the central role. The starting point is that the person with diabetes, to the best of his ability, is jointly responsible for the way in which he deals with his own disease process. He is expected to actively seek out the correct information and subsequently make decisions.

With this updated Care Standard, the Netherlands Diabetes Federation offers all parties involved in care a new guide to improving the quality of care for people with type 2 diabetes. The federation, as umbrella organisation for patients, treatment professionals and scientists, and as such a central contact point for governments and insurance companies when it comes to diabetes, is the ideal party to provide such a standard. By defining the norms (based on guidelines and legislations) that good diabetes care must achieve, all parties in the market can gain insight into what they may expect from the

treatment course. This support is essential for people with diabetes. After all, a well-informed patient is better able to make decisions, consider his own disease process and monitor his own health. This leads to an improvement in care outcomes and lower costs in the management of type 2 diabetes.

Additionally, the Care Standard provides concrete indicators to gain insight into the care provided by measuring performance and comparing outcomes. This includes outcome indicators, process indicators and indicators mapping patient experiences in the care process. These indicators have both internal (improving care and scientific professional development) and external (social justification) functions, safeguarding quality. Care outcomes also play an important role when contracting diabetes care.

The chain approach described in this Care Standard is in line with current developments where remuneration for care is not focused on individual medical interventions, but on a combined offering of products and services. The NDF Care Standard is the starting point for formulating chain care for patients with type 2 diabetes, and is therefore a guiding principle for care provision and care purchase, as well as being a handbook for patients. The NDF Care Standard does not apply to certain specific groups of patients; those who are pregnant or considering pregnancy, children (<18 years old) and patients treated entirely in the second line due to severe complications. Updates to include these groups are planned.

¹ Netherlands Diabetes Federation, A healthy view on diabetes; Prevention, care and knowledge combined in policy, policy plan 2006-2010, Amersfoort 2006

1 Introduction

1.1 Differences between a care standard², a guideline and a protocol

A care standard is a general framework outlining the treatment of people with a specific condition. It describes the norms (based on guidelines and legislation) that good care for a specific condition must meet in terms of both content and process. This makes it clear to all market parties what they can expect from the treatment course.

The NDF Care Standard is the general framework outlining the care of all people with type 2 diabetes, creating the foundation for good diabetes care in our country.

A guideline is a systematically developed document based on scientific insights (evidence based) and collective clinical experience (practice based) that can help care providers and patients make decisions about adequate (effective and efficient) treatment for a specific health problem. The guideline is a recommendation describing the 'what, when and why' and is, like a care standard and protocol, linked to a diagnosis.

The guideline is the input for a protocol which in addition to the 'what and when' describes the 'how'.

1.2 What is diabetes?

Diabetes is a metabolic disorder in which glucose regulation is disturbed. There are two main types: type 1 and type 2 diabetes. A number of other forms exist as well, including MODY, LADA and gestational diabetes. There is (currently) no cure for diabetes.

Type 1 diabetes Type 1 diabetes is characterised by a complete lack of the hormone insulin. It is usually diagnosed at a young age, and people are insulin-dependent. About 10% of all people with diabetes suffer from type 1 diabetes, is currently almost always treated in second-line care, and is not addressed in this Care Standard.

Type 2 diabetes This type of diabetes, also known as old age diabetes in the past, is a chronic, progressive metabolic condition in which glucose regulation is disrupted by the incorrect function and/or insufficient amounts of insulin. In addition to genetic predisposition, overweight and insufficient physical activity play a key role in shortfalls in insulin production and the development of type 2 diabetes. Current Western lifestyle has led to an enormous increase in the number of people with diabetes, and the age at which it is diagnosed is dropping steadily. 'Old age diabetes' is no longer an adequate description. The condition is mostly diagnosed and treated in primary care (see chapter 3.2); however, at least 25% of these patients are (also) treated in the second line. This is

2 Inspiration was drawn from the Care Standards report, Nyfer, Breukelen 2006, pag. 35 and the thesis by Houweling ST, Task delegation in primary and second-line diabetes care. Results of the DISCOURSE studies, 2005, pag. 26.

partly due to the condition itself, and partly due to diabetes-related complications or comorbidity.

Diabetes mellitus can eventually lead to severe complications. These complications occur because the disease process of diabetes damages small and large blood vessels. Examples of these complications are: diseases of the **larger** blood vessels surrounding the heart (leading to heart attacks, angina pectoris), the brain (stroke and cerebral bleeding) and legs (leading to wounds and amputations), and diseases of the **smaller** blood vessels in the kidneys (leading to loss of kidney function and ultimately dialysis), eyes (blindness) and nerves (neuropathy). The broad diversity of potential complications makes treating the patient with diabetes complex. In older people, this complexity is further increased by other existing conditions (comorbidity). Strict monitoring of all known risk factors for cardiovascular disease (including smoking, blood pressure, metabolic disorders and decreased kidney function) decrease the chances of complications occurring. In case of complications, it may be necessary to intensify treatment in cooperation with second-line specialties.

1.3 Incidence and prevalence

In 2003³ there were 600,000 people with diabetes in our country (prevalence). About 90% of them have type 2 diabetes. Each year, 72,500 new cases are diagnosed (incidence) and the National Institute for Public Health and the Environment (RIVM) predicts that the number of people with diabetes will increase by one third between 2005 and 2025 (32.5%). This makes diabetes the biggest climber among chronic diseases. An estimated 250,000 people in the Netherlands currently have the disease but remain undiagnosed or symptom-free. This estimate also is based on international comparisons, in which the assumption is that about 25% of the total population with diabetes remains unidentified. In addition to these 850,000 people with diabetes (600,000 known, and a potential 250,000 currently unknown), an estimated 750,000 people run the risk of developing diabetes in the years to come.

1.4 Prevention

Given the large number of people with type 2 diabetes mellitus, prevention is a key element of good diabetes care. Both primary and secondary prevention are needed. In primary prevention, the objective is to prevent the disease by influencing risk factors. For type 2 diabetes, overweight and insufficient physical activity are key factors that

3 RIVM, National Public Health Compass, Diabetes Mellitus, Bilthoven 2005

may influence the development of the disease. Primary prevention focuses on healthy individuals.

Secondary prevention is an essential and integral part of good care for people with diabetes. The objective is to avoid or reduce, delay or limit complications in people who have been diagnosed with type 2 diabetes.

These different forms of prevention are consistent with various phases of the disease. New health knowledge and forms of chain care mean that the above concepts are no longer applicable for high-risk individuals. The dividing lines separating prevention and curation and prevention and care have blurred. A new conceptual framework has been developed in the public health field over the past few years. This framework identifies collective prevention, consisting of universal and selective prevention, and individual prevention, consisting of indicated prevention and care-related prevention.

- **Universal prevention** focuses on the population as a whole, and has the objective of promoting behaviour-related health.
- **Selective prevention** specifically aims to identify (high) risk groups and implement directed prevention programmes to promote health.
- **Indicated prevention** targets individual health promotion in individuals who have symptoms but who have not been diagnosed. The goal is to prevent health damage through intervention.
- **Care-related prevention** is an essential and integral part of good care for people with one or more health problems. The objective is to avoid or reduce, delay or limit complications and support self-sufficiency.

This Care Standard describes the care for people with type 2 diabetes from diagnosis onwards. Primary prevention or, using the new conceptual framework's terminology, universal and selective prevention lie outside the scope of this Care Standard. It should be noted that a number of current developments focus on high-risk groups. These developments underwrite the importance of a more integrated approach of diabetes issues, and therefore a link between prevention and care. In future, this may lead to additions to the Care Standard. The NDF Care Standard focuses on individual prevention in patients with type 2 diabetes (indicated, care-related). Health care providers may be expected to be aware of risk factors for undiagnosed diabetes, allowing the diagnosis to be made at an early stage and treatment to be initiated. Lifestyle changes are known to be able to prevent or delay the onset of diabetes. The NHG guideline for Type 2 Diabetes Mellitus⁴ provides concrete suggestions for how to achieve this.

4 Rutten GHEM, Grauw de WJC, Nijpels G, Goudswaard AN, et al NHG Guidelines type 2 Diabetes Mellitus (second revision). Huisarts Wet 2006; 49:137-152

In summary: type 2 diabetes is a chronic, progressive condition that affects growing numbers of people at an increasingly young age, for which individual treatment is growing increasingly complex.

1.5 The Diabetes Chain Care programme

Upon request of the Ministry for Public Health, Welfare and Sports, ZonMw (the Netherlands organisation for health research and development) initiated the 'Diabetes Chain Care's programme. This was motivated by the findings of the "Diabetes Care Taskforce"⁶ which indicated that a multidisciplinary care group organised in accordance with the NDF Care Standard would be the best safeguard for the provision of optimal diabetes care at a reasonable price.

A draft chain-dbc⁷ diabetes was written based on the first NDF Care Standard. Subsequently, diabetes care groups were selected for participation in the programme, which will run until the end of 2008. Participating diabetes care groups enter into a dbc with the health insurer. This means a single price is agreed upon for all diabetes care, and that the diabetes care group provides care based on the agreed upon chain-dbc. The minister of Public Health, Welfare and Sports hopes the results of the programme will provide insight into whether a chain-dbc is the correct instrument for organising, providing and financing high-quality, affordable diabetes care in all of the Netherlands. The results were not yet known at the time this Care Standard was written.

5 See website www.zonmw.nl Diabetes Chain Care Programme

6 Diabetes Care Programme Task Force. Better Diabetes care. Ministry of Public Health, Welfare and Sports, The Hague 2005

7 Diagnosis-treatment combination (dbc)

2 Contents of diabetes care

2.1 Introduction

The content of care for people with type 2 diabetes as described in this Care Standard is based on the most recent NHG guideline for Type 2 Diabetes Mellitus. This guideline describes, among other things, how the diagnosis should be made, what medical interventions are required, what education is needed and which lifestyle recommendations should be given. In consultation with the patient, this standard is translated into an individual care plan by a multidisciplinary diabetes care group led by the treating (family) doctor (see chapter 3.2). The concrete contents of the care generally provided in the first year following diagnosis are described in appendix 4.

2.2 The person with diabetes as director of his own care plan

The Care Standard was not written from a supply perspective, but rather looks at the demands of patients using care. An individual care plan, in accordance with the NHG guideline and the NDF/CBO guidelines, defines all items that are important for the treatment of the patient. This includes individual goals, target values, education and compliance. In accordance with the NDF Care Standard, every individual with diabetes should have an education, motivation and treatment plan. The responsibilities of the diabetes care group members and the patient are also defined. An individual care plan helps give the patient insight into his disease process, strengthens self-care and stimulates fulfilment of a key role in monitoring the course of the disease process. The care plan more directly gives the patient responsibility for his own health.

The patient is part of the diabetes care group for his own treatment.

The individual lifestyle of a patient significantly affects the course of diabetes mellitus. It is therefore essential to invest in the involvement of the patient and his direct environment when drafting the individual care plan. This allows the creation of a care plan tailored to the individual patient's level of knowledge, age and lifestyle. Immediately following diagnosis, it is likely that the patient will lack the self-confidence and knowledge about the disease and the process required to fulfil his own care plan. In this phase, permanent support from the diabetes care group is required. As the patient obtains more knowledge, his self-confidence and involvement will increase. Knowledge encompasses both insight into the structure of the chain and individual responsibilities within it, and disease-related knowledge. If the patient is fully informed about the disease, treatment options and his own treatment plan, has confidence in the treatment plan and is involved in its implementation and evaluation, he will be capable of taking on the director's role. The director's role, based on complete information, positively influences the patient's motivation and compliance.

2.3 Education and support of self-care

Education may be described⁸ as a part of the care process in which an individual with diabetes (and any carers) are provided with knowledge, insight and skills required for diabetes-related self-care. The goal is to enable people to deal with all daily occurring situations as well as crisis situations, while striving to maintain the desired lifestyle in all situations.

Diabetes education is only effective if strategies focused on actually and continuously implementing the learned information are used.

The individual with diabetes can, if desired, use information from a shared file (for example the NDF diabetes card) to support his self-care. Such a shared file is focussed on stimulating the patient to register his own data and thereby gain insight into the course of the disease. The goal is to promote compliance by giving the patient insight into care outcomes achieved through shared direction.

The diabetes care group plays a central role in the overall educational programme, but contacts between people with diabetes and the patient organisation are equally important. Within diabetes care, various educational methods are used, including group education and peer education from one person with diabetes to the other. A key role will be reserved for modern web-based IT applications that use interactive techniques to provide customized information tailored to individual situations⁹.

As part of the educational programme, self checking can contribute to self management of the condition. It provides greater insight into the factors that determine blood glucose levels, and can thereby lead to adequate blood glucose regulation. Self checking can also delay the use of additional medication or the switch to insulin, and prevent, delay or reduce complications. Based on the agreements outlined in the individual care plan, a checklist is drafted and used to monitor the care process and results. The equipment used by the patient for self testing should be checked and calibrated regularly.

The following paragraph outlines the key lifestyle factors. For more extensive information about various factors, we refer you to the relevant guidelines (appendix 1).

⁸ NDF Advice for Diabetes Education, Amersfoort 2005

⁹ NDF policy plan 2006-2010 from page 31

2.4 Information about lifestyle

2.4.1 Nutrition and dietary advice

This advice is focused among other things on optimising blood glucose levels, optimising the fat spectrum, preventing or delaying diabetes-related complications and optimising body weight. General dietary recommendations may be provided by care providers other than dietitians, provided they are competent. This may include dietary advice in the event of hypoglycaemia, timing of injection and eating, and motivating and stimulating people to implement dietary advice and recommended behavioural changes.

Individualised nutrition or dietary advice must be given by the dietitian. It is important that all requested and unrequested dietary advice from various care providers given to people with diabetes be supported by scientific evidence and not be contradictory, but support and strengthen other advice. Therefore, dietary advice must be based on recent NDF Nutritional Guidelines for Diabetes.

2.4.2 Physical activity

People with diabetes need to be stimulated to exercise and improve physical condition. Research has shown that regular physical activity and moderate to good physical condition leads to a reduction of cardiovascular complications¹⁰. Physical activity can also contribute to weight loss. The advice regarding the type of physical activity the person with diabetes should undertake should be in line with the individual's potential, motivation and daily routine, and be based on the recent NDF guidelines for Sports and Physical Activity. Individuals are educated on the influence of physical activity on blood glucose levels, allowing medication use and nutritional advice to be tailored to match.

2.3.3 Smoking

Smoking is the most important risk factor for cardiovascular disease, also among people with diabetes. People with diabetes are offered help to reduce or stop smoking.

¹⁰ Wei, 2000. Hu, 2001. Gregg, 2003

3 Organisation of diabetes care

3.1 Introduction

The rapidly growing number of people with type 2 diabetes and the complexity of treatment leads to an increased risk of the care ecosystem fracturing, with care being offered by multiple care providers, disciplines and organisational structures. This leads to the potential for a lack of cohesion and continuity of care. The rest of this chapter will focus on the increasing importance of multidisciplinary cooperation, in which various steps in the process are harmonised and coordinated in terms of both content and timing.

3.2 The diabetes care group

Overall, the care for the majority (70 to 80%) of patients with type 2 diabetes takes place in family practice¹¹. In general, this concerns people recently diagnosed and patients who are stable under current treatment, or require less complex treatment. 70% of these patients are over the age of 70 years.

Good diabetes care requires a multidisciplinary approach by a multidisciplinary team, with final medical responsibility resting with the treating (family) doctor. The organisation of care surrounding the person with diabetes is handled by a diabetes care group. This is a multidisciplinary team created to provide functionally structured chain care in accordance with the NDF Care Standard, embedded in primary care¹².

Diabetes care groups will primarily be embedded in primary care; second-line treatment will be limited to patients with specific problems and patients who develop complications despite good diabetes care. This requires clear transmurals working agreements based on national agreements on consultation, referral and reverse referral.

In addition to the patient, who occupies a central position, the diabetes care group has two 'shells': the first shell, containing 'core disciplines' within the care group, and a second shell with other disciplines.

Central role for the patient

As the Care Standard is based on the person with diabetes' demands and expects an active attitude towards his own disease process, the person with diabetes is also part of the diabetes care group when it comes to his own treatment.

¹¹ Implementation plan for diabetes mellitus, NDF/NIV/CBO, 2006 page 6

¹² Better Diabetes care, Report from the Diabetes Care Programme Task Force. 2005 page 10

First shell

The following 'core disciplines' are represented in the care group.

- (Family) doctor

From here on out, this NDF Care Standard will refer to – for the purposes of legibility – the treating (family) doctor who bears final medical responsibility.

The patient's family doctor is the preferred physician. Specific characteristics of family medicine, including low threshold to entry, local care, attention for common comorbidity and comedication, personal and continuous care provision and knowledge of family history and social context for the patient, make family medical care ideal¹³. The family doctor may be supported and supervised by a doctor with specialist knowledge of diabetes care in the execution of this care from within the diabetes care group. Final medical responsibility remains with the family doctor, however.

- Practice support, practice nurse
- Diabetes nurse
- Practice assistant
- Dietician

Second shell

In addition to the core disciplines (first shell), disciplines from outside the diabetes care group are listed (second shell) with whom structural working agreements are made, namely:

- Second line: ophthalmologist, internist, nephrologist, cardiologist, neurologist, vascular surgeon, clinical chemist
- Pharmacist
- Physiotherapist
- Social worker
- (Medical) psychologist
- Podiatrist / pedicure

3.3 Responsibilities and authorisations

The multidisciplinary diabetes care group is embedded in primary care and provides care together with other teams in the region in cooperation with second-line care disciplines. The organisational structure of a diabetes care group must allow it to operate as a legal person (as a contract partner for the health care insurer). Availability of the treating (family) doctor within the diabetes care group is guaranteed 24 hours per day, and is integrated in the existing 24-hour availability of the family doctor.

The doctor with final medical responsibility with whom the patient entered the treatment contract is responsible for the proper organisation of care¹⁴, and acts as the contact point for all members of the diabetes care group and second shell disciplines. Care by all disciplines is provided in accordance with the NDF Care Standard and the Guidelines (appendix 1).

There are requirements for all professionals within the diabetes care group with regard to professional knowledge, in part kept updated through continuing education. The level of care each member of the group can provide and when he or she must refer to a colleague/other discipline must be clear, taking into account the quality characteristics described per care professional. This level of provided care should also be clear to the person with diabetes. Additionally, it is clear who bears final medical responsibility, who the core treatment professionals are, which members of the diabetes care group are responsible for what, and in which situations the patient must be referred to another discipline.

Authorisations, tasks and responsibilities of core disciplines in the diabetes care group are fine-tuned to each other in order to provide efficient and effective care. Any actions taken upon instruction of the treating (family) doctor by another member of the core team are recorded in writing. The care to be provided in accordance with standards and guidelines is recorded in written working agreements. The members of the core team are authorised and capable of performing their tasks, as defined in the Individual Health Care Profession Act (BIG Act). Tasks in diabetes care may be entirely or partially performed by a doctor, a diabetes nurse, a dietician, a practice assistant or a practice supporter. These individuals should be adequately educated and knowledgeable in accordance with the registered requirements for their profession. The reorganisation of tasks is formally organised in the diabetes care group within the possibilities and rules of the BIG Act.

In order to provide optimal care for the patient, adequate data exchange and standardised record keeping is required. However, due to slow developments in the ICT field, it is currently not always possible to access the correct data at the location where care is provided.

3.4 Diabetes care protocol

Each diabetes care group has a clear written protocol outlining the treatment of patients with type 2 diabetes, based on the most recent guidelines on specific events and circumstances that may occur in a patient's life.

¹³ Care for patients with type 2 diabetes mellitus; <http://nhg.artsennet.nl>

¹⁴ Dutch Medical Treatment Act (WBG Act)

3.5 Communication in the chain

Sharing information is crucial for successful chain cooperation. All parties involved in treatment must have access to current information about the person with diabetes. Communication between the person with diabetes and the diabetes care group may be promoted by using a shared medical file (for example the current paper NDF diabetes card). All data required for the treatment of diabetes are recorded on this card, and it provides support for the person dealing with diabetes. An electronic version of the diabetes card is being developed. Policy with regard to regional diabetes care is discussed in a structural manner within the diabetes care group and between core disciplines and the second shell. Where necessary, care is adjusted and/or harmonised. There are firm agreements in place regarding communication for referrals and how to provide each other with information.

3.6 Privacy

The right to privacy is an individual fundamental right, and is important both within and outside of health care. For medical issues, this right must be protected within, but also outside of health care. A great deal of patient data are collected and recorded. Care providers are asked for transparency while also safeguarding patient privacy. Specific legislation safeguarding patient privacy is essential in this process. Without attempting a complete overview, a few pieces of legislation are outlined below.

First, the treating professional has a duty of confidentiality based on the BIG¹⁵ and WGBO¹⁶ Acts. This duty of confidentiality also applies to other individuals involved in treatment and who gain access to patient data¹⁷.

The Dutch Personal Data Protection Act defines the reasons for which personal data may be collected and how they must be stored in order to safeguard patient privacy, both now and in the future. Among other things, this means that only data required for the treatment of the patient are recorded, and that these data are to be used exclusively for said treatment. If more data is recorded and they are used for purposes other than treatment, patient consent must be obtained first. The medical file must be stored such that unauthorised parties do not have access. The rules for physical patient privacy are outlined in the WGBO. Physical privacy means treatment of the patient takes place where it cannot be observed by others, unless the patient agrees to having treatment be observed by others¹⁸. Care for people with diabetes is organised so as to safeguard privacy.

¹⁵ Individual Health Care Professions Act, article 88

¹⁶ Dutch Medical Treatment Act, article 457

¹⁷ Health Care Client Rights Act, article 4

¹⁸ Dutch Medical Treatment Act, article 459

3.7 Accessibility

The consultation room and other practice rooms meet normal quality standards and are easily accessible to the patient. Practice rooms are fitted with materials and equipment that is maintained properly and of a quality level outlined in currently valid reports. The quality of the medical equipment (including blood pressure monitor, blood glucose equipment and scales) must be checked periodically (annually). Adequate time is scheduled for the consult. The consultation time with the doctor and other care providers including the diabetes nurse, dietician, practice assistant and practice supporter are coordinated from the patient's perspective.

Good diabetes care is available to all people with diabetes in our country. This requires a network of multidisciplinary diabetes care groups with national coverage.

3.8 Facilities

Good facilities (for example a diabetes service) can play an important role in supporting data collection and coordinating diabetes care. These facilities could encompass (a number of) the following elements:

- Central coordination of appointment monitoring for 3-monthly and annual check-ups, including prior laboratory testing
- Annual call up for fundus exam
- Supervising, advising and supporting the organisation of diabetes care
- Starting insulin therapy
- Providing continued education to members of the diabetes care group
- Offering annual level information on glycaemic control, lipid spectrum, kidney function, kidney damage and fundus checks for patients called in relation to the overall patient population
- Hosting a database for a diabetes care group, which can be used to create a feedback link with care providers

These facilities support coordination within the chain, provide the patient with necessary care close to home and in a timely fashion, keeps the diabetes care group optimally informed, and final medical responsibility clearly rests with the treating (family) doctor within the diabetes care group.

¹⁹ NHG report 'Practice inventory in family practice'

4 Quality of diabetes care

4.1 Introduction

The NDF sees gaining insight into the quality of diabetes care as a key policy issue. The goal is to reduce risks, improve service, improve information provision and increase safety. Additionally, quality policy yields operational results. This includes organisational improvements within the chain, such as structural working agreements, structured communication and more efficient implementation of means and personnel. Ultimately, this should all lead to optimal outcomes for diabetes care.

Knowledge and insight are essential for the implementation of quality policy. Among other things, this requires access to reliable, current data. Good ICT facilities are a necessary, but as yet unrealised, condition for this process.

The so-called Deming cycle can be used to achieve continuous quality improvement for care. The first step in the cycle is to identify a problem (Pro-Act) and decide that change is desired (Re-Act). The solution is made possible by analysing the cause and the possibilities for improvement (Plan). Subsequently, the desired change is implemented (Do), after which an evaluation determines whether goals have been achieved and quality has actually improved.

4.2 Recording outcomes

This Care Standard, based on evidence-based guidelines and advisory reports, is one of the necessary tools for managing the care provision process. The quality policy outlined in the NDF Care Standard focuses on care outcomes (care results). The use of care outcomes is based on the fact that feedback in the form of care outcomes will stimulate care professionals to improve²⁰.

In order to achieve this goal, outcomes must be formulated based on current guidelines, and records must be kept based on measurable criteria. The outcome parameters²¹ are divided into:

²⁰ The impact of type 2 diabetes mellitus in general practice: long-term course of illness and outcome of care in an academic family medicine setting: the Nijmegen Monitoring Project. Thesis, Nijmegen 2001 (ISBN 90-5073-004-3)

²¹ Walburg, Outcome management in health care. 2003

- Process and structure parameters. Process parameters include, among other things, full registration of target group, call up monitoring, waiting times, the number of doctor-patient contacts and the number of cancelled appointments. Structure parameters include the membership of the diabetes care group, the frequency of (structured) meetings, continuing education programmes, etc.
- Clinical outcome of care parameters. These outcomes are measured based on target values as formulated in the guidelines (NHG guidelines). These outcomes may be compared (benchmark) with the guidelines (evidence based) or with data from other care groups (peer review).
- The functional outcomes are either quality of life or social functioning. This encompasses three dimensions: physical, psychological and social.
- The appreciation of the care process by the person with type 2 diabetes. This appreciation is measured using a scientifically validated questionnaire: for example the CQ index questionnaire.
- The costs of the care process.

4.3 Benchmarking

On a patient level, recording outcome data provides the possibility to monitor individual effectiveness of medical and non-medical interventions. It also allows swift insight into whether agreements are met and goals set in individual treatment plans are feasible or require adjustment.

Recording outcomes also provides insight into the health situation on a population level: all patients in a number of diabetes care groups. These results can be used to compare the outcomes of care at process and clinical levels with each other (peer review) and with the targets formulated in the guidelines (NHG guideline / NDF Care Standard). Based on these data, care on a population level can be adjusted using the quality cycle described.

The benchmark is ultimately designed to work in accordance with the drafted norms. Each diabetes care group defines a quality policy and sets goals related to it. If the goals, set within the norms, are not achieved, an improvement plan is drafted for the next year. Documents for quality improvements include, in addition to instructions for collecting outcome, structure and process parameters, instructions on how data should be stored, revised, destroyed and who may or may not access said data (standard operating procedures, SOPs). A procedure is in place to ask the person with diabetes for permission to use anonymous aggregate (quality) data.

The diabetes care group discusses the results of treatment on a group level at least annually, where possible comparing them with data from other centres.

4.4 Working according to the NDF Care Standard

Parties wishing to work according to the NDF Care Standard (and guidelines) and obtain funding to do so must be able to provide the results of diabetes treatment. Initially, this will only require a limited list of items primarily concerned with the treatment process. Ultimately, however, not only treatment process items will be measured, but also health outcomes. A workable solution already exists in various countries (The USA, Australia and Finland) which stimulates and guides improvements in diabetes care. Scientific research in Dutch general practice has shown the effectiveness of this method. This Care Standard provides individuals with the possibility to initiate such a stimulating plan. At first, this would only measure a limited number of process variables. Based on an existing situation, annual goals and terms defining improvement of diabetes care for all parties are chosen on a regional level, preferably using involved actors as a sounding board (people with diabetes, treatment professionals, insurers, government).

Starting point:

The NDF guidelines and the most recent NHG guideline remain the starting point for good diabetes care. In order to provide good diabetes care, a number of care components are required:

- A good organisational structure, defined in a protocol
- A description of the process (has everything that needs doing and measuring been done and measured)
- The result (how well was it done)

Criteria can be defined per component, creating a checklist. Both the diabetes care group providing care and the external auditor (regional coordinator, health care insurer) can use the list to measure the quality of care. Using the baseline measurement, agreements can be made with the team concerning the next year (result commitment). Results from teams in various regions can also be compared. Factors that influence quality are often identified using this method, and ways to remove impeding factors can be evaluated in consultation with the health care insurer.

²² de Grauw WJ, van Gerwen WH, van de Lisdonk EH, van den Hoogen HJ, van den Bosch WJ, van Weel C. Outcomes of audit-enhanced monitoring of patients with type 2 diabetes. *J Fam Pract.* 2002 ;51:459-64.

1 Relevant guidelines

The most recent NHG Guideline for Type 2 Diabetes Mellitus. At the time of writing of this NDF Care Standard, the March 2006 guideline was current (Rutten GHEM, Grauw de WJC, Nijpels G, Goudswaard AN, et al. NHG guideline for type 2 diabetes mellitus (second revision). Huisarts Wet 2006;49:137-152)

For all other relevant guidelines, please refer to the overview of guidelines on the NDF website (www.diabetesfederatie.nl). The permanent NDF Advisory Committee on Standards and Guidelines keeps the overview up to date.

2 Organisational Structure Checklist

The most recent NHG Guideline for Type 2 Diabetes Mellitus. At the time of writing of - Is there a list of the entire population in the care area

- Is there a list of people with diabetes
 - Can numbers be specified with regard to dietary advice, tablet use, insulin use and a combination of the latter two
- What is the membership of the diabetes care group
- Is a protocol for diabetes care in place
 - Who is the coordinator
 - Are there agreements on structured meetings
 - Are there agreements on case finding
 - Are there guidelines for education
 - Is education recorded per patient
 - Who is responsible for the education
 - Who is responsible for insulin dosing
 - Who performs the 3-monthly checks
 - Who performs the annual check
 - Who cares for people who are immobile or live in a nursing home
 - Are there agreements with the pharmacist
 - Is there a direct relationship with an internist
 - Are there clear agreements on referral and reverse referral
 - Who provides continued education for team members
- Is there a call up system
- Quality policy regarding measurements
 - Weight
 - Blood pressure
 - Blood glucose level
 - Microalbumin
 - Lipids
 - HbA1c
- Degree of patient participation
 - Who informs people of patient association DVN
 - Is there a patient questionnaire

3 Quality parameters for good diabetes care

Overview of possible indicators when measuring the quality of care for patients with type 2 diabetes mellitus²³. Where possible, target values have been taken from the NHG guideline for Type 2 Diabetes Mellitus.

Parameter	how often	recorded	%measured ²⁴	result ²⁵
1 HbA1c	1x/yr	medical file	%	% < 7%
2 Blood pressure	1x/yr	medical file	%	% <140
3 Body Mass Index	1x/yr	medical file	%	kg/m2 <25 < 30
4 Eye exam	1x/2 years	medical file	%	DRP blind/poor vision
5 Foot exam	1x/yr	medical file	%	SIM score ulcer/amputation
6 Kidney function	1x/yr	medical file	%	
- clearance	1x/yr			% clearance < 60 < 30 ml.min
- microalb	1x/yr			% microalb % proteinuria
7 Lipid profile	1x/yr	medical file	%	% LDL < 2.5 mmol/l
8 Smoking	Yes	medical file	%	% of smokers that stopped
9 Dietician visit	New patient annually	Questionnaire	%	
10 Self regulation	Yes	Questionnaire	%	
11 Patient satisfaction	1x/yr	Recommended: CQ index		
- diabetes care			%	
- questionnaire response			%	
- 24 hour availability			%	
- explanation of results			%	
- treatment			%	
12 Member of patient association DVN			%	
13 How many complications occurred?				
- death: age and cause				
- cardiovascular disease				
- amputations				
- blindness/poor vision				
- kidney dialysis or transplant				
14 Use of education and medicines related to diabetes ²⁶ . Example: How many people with diabetes switched to insulin in the past year?				
15 How many new people with diabetes were discovered?				

²³ Further elaboration is in development.

²⁴ '% measured' refers to the percentage of all diabetes patients reported on annually.

²⁵ 'result' refers to the percentage of the measured number.

²⁶ New, specific quality parameters for pharmacovigilance and compliance will need to be developed.

4 Content of care in the first year following diagnosis

The care for patients with type 2 diabetes is provided by a multidisciplinary diabetes care group with a treating (family) doctor bearing final responsibility. The diagnosis 'type 2 diabetes' is made by the treating doctor. The NHG guideline is used to make the diagnosis. The diagnosis is based on an elevated fasting blood glucose level (in boundary cases, confirmed by two laboratory values).

Immediately following diagnosis, medical history, lifestyle and physical fitness are mapped. Based on this, an individual risk profile and individual treatment goals and a treatment plan are drafted based on guidelines. This treatment plan is discussed with the patient by the treating (family) doctor. In this discussion, general target values are translated into individual care goals, with the patient's contribution playing a central role.

In order to allow the patient to make a contribution to the treatment plan, an educational course is completed with the patient.

The individual treatment plan contains targets for weight, glucose regulation, blood pressure, lipids and kidney function. As part of the treatment plan, agreements are made regarding lifestyle changes, cardiovascular risk profile, feet, eyes and kidney function. Target values for process and care outcome are translated to the patient's individual situation, in accordance with the NHG guideline for type 2 diabetes mellitus and the NDF/CBO guidelines. If the agreed upon targets are not achieved, therapy is adjusted in consultation with the patient.

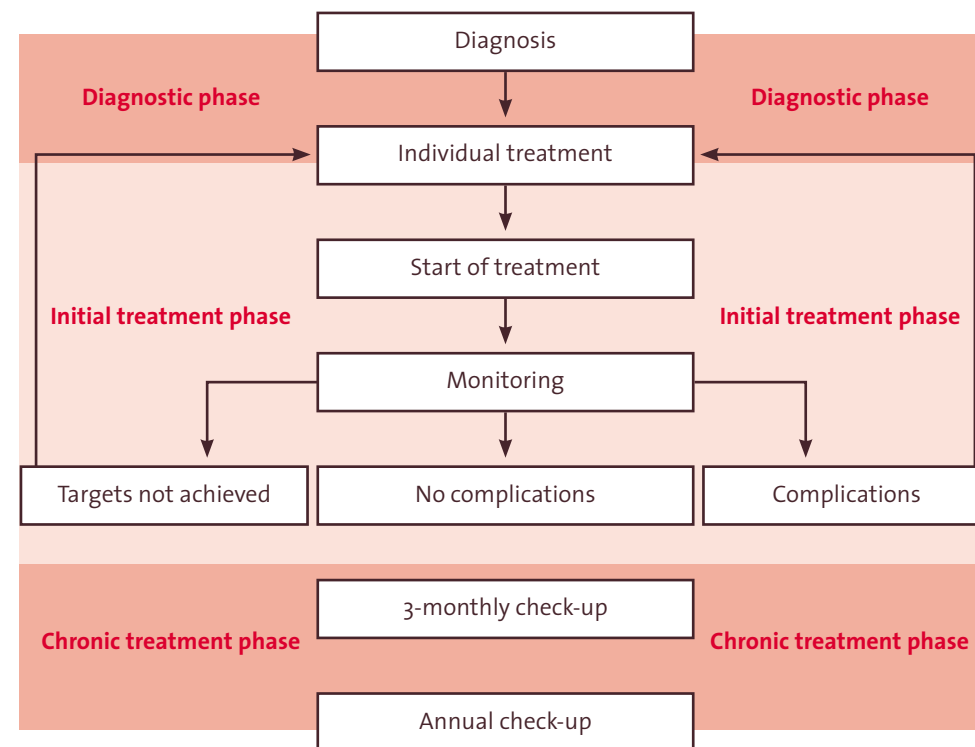
Upon achieving stable control of blood glucose and risk factors (often after about 3 months), check-ups occur at least 3-monthly, paying specific attention to complaints, problems, lifestyle changes, weight, glucose regulation, blood pressure and other conditions related or unrelated to diabetes. Treatment is adjusted where necessary.

A more extensive check-up is performed annually, during which all aspects of diabetes and its treatment are evaluated in accordance with the NHG guideline for type 2 diabetes mellitus and the most recent NHG-CBO guideline on cardiovascular risk management. Based on these data, the treating (family) doctor drafts an individual risk profile, and evaluates and where necessary adjusts individual treatment goals together with the patient. If the person does not appear for periodic check-ups, a reminder must be sent. The diabetes care group will attempt to contact the patient (by phone) to find out why the appointment was not met.

Adequate time is scheduled for the consult. The consultation time with the doctor and other core disciplines within the diabetes care group are coordinated.

Each diabetes care group has a clear written protocol outlining the treatment of patients with type 2 diabetes, base

Care Process



5 Membership of working group Updating NDF Care Standard

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The working group was appointed within the framework of the permanent NDF advisory committee on Standards and Guidelines.

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