Dementia

Health Council of the Netherlands

Dementia

to:

the Minister of Health, Welfare and Sport

Nr 2002/04E, The Hague, 12 March 2002

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Most Health Council reports are prepared by multidisciplinary committees of Dutch or, sometimes, foreign experts, appointed in a personal capacity. The reports are available to the public.

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Preface to the English edition

In a letter dated 12 May 1999 (GMV 993446) the Minister of Health, Welfare and Sport asked for information on the current level of knowledge concerning dementia. The Minister's request was submitted tot the Dementia Committee of the Heath Council. On 12 March 2002, I presented the Committee's report tot the Minister. An English translation of my letter accompanying the report reads as follows:

Madam minister,

On 12 May 1999, you requested advice on dementia, with particular reference to Alzheimer's disease.

I am pleased to submit the advisory report entitled 'Dementia' drawn up by the Committee of the Health Council appointed for the purpose. The Standing Committee on Medicine and the Standing Committee on Medical Ethics and Health Law evaluated the report. I can fully endorse the Committee's conclusions and recommendations.

Today, I have also sent this report to the State Secretary for Health, Welfare and Sport.

I hereby present the English translation of the complete text of the Committee's report.

Prof. JA Knottnerus
President of the Health Council of The Netherlands

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Executive summary

Dementia is primarily a disease of the very elderly. Nearly 1% of 65 year olds suffer from dementia. This figure rises to around 40% in people aged 90 and over. The number of very old people in the Netherlands is set to increase substantially over the coming decades. If the prevalence figures do not change and curative treatments fail to emerge, the number of dementia sufferers, which currently stands at around 175,000, will have risen to approximately 207,000 by 2010. By 2050 there are expected to be 412,000 dementia patients in this country. In 2000 it was estimated that 1 in every 93 people in the Netherlands had dementia; in 2010 the prevalence will stand at 1 in 81 and in 2050 it will be 1 in 44. The Minister of Health, Welfare and Sport has requested advice from the Health Council on the current level of knowledge with regard to dementia. This advisory report, prepared by a Health Council committee, is the Council's response to that request (Annexes A and B). It focuses on the incurable forms of dementia in people aged 65 and over.

Dementia has far-reaching implications for patients and their carers : Dementia is not a disease in its own right but the name given to a combination of symptoms (i.e. a syndrome). There are a considerable number of diseases in which dementia can occur. The essential features are disorders of the memory, speech, thinking, perception, reasoning and behaviour. The process of deterioration is slow and often years pass before the diagnosis is made. Independent functioning gives way to dependence, and participation in social activities becomes difficult, which puts pressure on family relationships and friendships. Slowly but surely, the patient loses all contact with the here and now and also the ability to recognise things, situations and people, even those who have been closest to him. Ultimately, the ability to use and understand language is entirely lost. Patients become incontinent, at some point they lose the ability to walk, they become completely debilitated and finally they die. People with dementia often live for many years after the diagnosis is made, but they die earlier than their nondemented peers. Dementia is frequently accompanied by personality changes and episodes of anxiety, paranoia , depression, hostility, agitation or apathy. Wandering and sleep-wake (circadian) rhythm disturbances also occur. The emotional and behavioural disturbances frequently also have a psychosocial dimension (learning to cope with the disease) in addition to their biological background (brain degeneration). Contrary to widespread belief, people with dementia can experience psychological pain and become depressed, sad or anxious – despite their disturbed thinking – on account of all the things they are no longer able to do. For close friends and relatives, dementia is a lengthy process of mourning over the loss of a person. Caring for a close relative with dementia is an onerous task which can take a heavy toll on one's well-being and health.

Alzheimer’s disease has many variants: Alzheimer’s disease (AD), vascular dementia and dementia in Parkinson's disease are the commonest forms of dementia. Post-mortem examination of the brain tissue of patients with AD reveals characteristic microscopic abnormalities, the so-called plaques and tangles. In 1906 Alzheimer identified these structures as being responsible for the clinical picture presented in a relatively young woman who is now recorded in the literature as the first patient with Alzheimer's disease. These structures have similarly been the principal focus of research into the pathogenesis of dementia. According to the leading current theory, it is the plaques – which result from an excess of the protein beta-amyloid – that cause AD. Other theories regard the plaques and tangles not as the cause of the disease, but as its result. The classical form of AD, as described by Alzheimer, occurs less commonly than was believed until recently. Other microscopic structures in addition to plaques and tangles are frequently also found in the brain, notably vascular abnormalities. The plaques and tangles typically associated with AD are also frequently present in patients with vascular dementia or Parkinson's disease. In fact, such mixed forms are the rule rather than the exception in older dementia patients (three-quarters of them are aged 80 or over). The field of dementia classification is currently experiencing a period of great activity.

- The realisation that various factors contribute simultaneously to the onset of dementia must serve as the guiding principle in determining the future course of research into the diagnosis and treatment of this condition.

Potential methods of prevention are not yet adequately explored: In the hope of finding new avenues of prevention, a host of factors have been examined to determine whether they are implicated in the occurrence of dementia. Among these factors are: educational level, a history of head injury, alcohol use, an inactive lifestyle, exposure to various metals, use of medication, and risk factors for cardiovascular diseases. Dementia is less frequently encountered in individuals who have been using certain anti-inflammatory drugs or oestrogenic hormones for a prolonged period than controls who have not. It is hoped that it may be possible to use these drugs preventively. As far as the known risk factors for cardiovascular diseases are concerned – i.e. high blood pressure, atherosclerosis, diabetes and smoking – it is almost certain that they not only increase the risk of vascular dementia, but also that of AD.

- The fact that risk factors for cardiovascular diseases very probably also increase the risk of dementia needs to be acknowledged in public information on how to lead a healthy lifestyle and in guidelines for the detection and treatment of high blood pressure, diabetes, atherosclerosis and elevated cholesterol in otherwise healthy adults.
- High priority needs to be given to research into the effectiveness of such measures in preventing dementia.
- Preventive use of anti-inflammatories and oestrogens other than in a research context would be premature.

GPs must be on the look-out for dementia: Complaints about memory loss always warrant careful investigation. Diagnosis has both disease-oriented and care-oriented dimensions. The pathological implications concern the nature and origins of the problems in question. Of paramount importance is the detection of treatable forms of dementia and comorbidity. The establishment of a diagnosis frequently requires more than one examination and sometimes also a second opinion from a neuropsychologist. Ideally, neuropathological examination will be the final stage in the disease-oriented diagnosis. Care-oriented diagnosis will include an assessment of the impact that the disease has on the patient's functioning, with psychosocial implications also being considered. It appears that older patients sometimes only come to receive treatment at a late stage. This is regrettable, because the patient and family will then not benefit from the opportunities that exist for information, support and counselling – which can be especially valuable in the initial phase of the disease. It is important that the general practitioner should be alert to the early signs of dementia. It appears that not all GPs are able to recognize the symptoms of dementia in good time.

- Every GP must be able to recognize the symptoms of dementia. On suspicion of dementia he must embark on a diagnosis, exercising the requisite care. If, however, it should transpire that the individual in question wants nothing to do with this, the GP must respect that wish.

- More attention needs to be paid in the diagnostic guidelines to care- and support-oriented diagnosis.

Simple diagnostic tests and 'early diagnosis' do not yet exist in reality: Nobody has yet succeeded in replacing the time-consuming process of clinical diagnosis with one or more reliable tests (e.g. neuropsychological tests, imaging techniques or the determination of specific substances in blood, urine or cerebrospinal fluid). Nor have any reliable methods yet been developed for the earlier detection of diseases that cause dementia. Efforts to simplify and accelerate diagnosis have tended to emphasise the question of whether or not the patient actually has AD – an approach which fails to take account of the possibility that there may be several contributory factors underlying the development of dementia. It seems likely that this is the reason for the lack of success.

Genetic diagnosis not worthwhile: Hereditary forms of dementia are rare and of little relevance to the elderly. We do know, however, that the so-called apoE4 gene somewhat increases the risk of AD, and that this is also the case among the elderly. Determining whether a given individual is a carrier of that gene is not worthwhile, since it does not tell us for certain that the person in question actually has the disease although its presence increases the risk of AD. For the same reasons, screening for this particular gene is unsuitable as a predictive test with regard to the question of whether a person will develop dementia: a negative test result does not mean that the person will remain free from AD, and equally a positive outcome does not necessarily mean that the person will develop the disease.

Brain material is a source of knowledge: The development of diagnostic methods and therapies demands research into the biological processes that give rise to dementia. Brain tissue can provide information about those processes. Examination of brain tissue is also an important adjunct to clinical diagnosis. However, post-mortem examination of the brains of dementia patients is only performed in exceptional circumstances.
- Scientific research benefits from statutory regulations governing the procurement, storage and use of human material for scientific purposes.
- The first step towards increasing post-mortem examination of the brains of dementia patients must be to conduct a review of the problems that arise in connection with such procedures.

Anti-dementia drugs are so far unsuccessful: The results achieved with the first anti-dementia drugs – the cholinesterase inhibitors, which include rivastigmine (Exelon®) – for patients with AD are extremely poor. Any degree of efficacy is achieved only in a few patients, and it is impossible to predict who will benefit. Side-effects, on the other hand, are numerous – and all patients are exposed to these, regardless of whether the treatment is beneficial or not. The question therefore clearly needs to be asked as to whether, all things considered, these drugs make a positive contribution to the well-being of dementia patients. Many questions remain to be answered, including what effect the treatment has in the longer term. There are also ethical issues that need to be taken into consideration. Nevertheless, research is being conducted into the possibilities of using these compounds in people who (as yet) display only mild cognitive decline, but no dementia, and in patients in the later stages of AD. All kinds of other therapeutic approaches have been tried and several hundreds of compounds are currently undergoing research – the majority of them having not yet progressed beyond the test-tube stage. Virtually no hard results have been obtained to date.

- It is unlikely that a compound will be discovered in the foreseeable future that is capable of controlling all of the symptoms of dementia. A more realistic scenario is the development of combination therapies.

Powerlessness makes people vulnerable to the ‘therapeutic illusion’: Dementia evokes feelings of powerlessness and desperation in patients, families and carers alike. All those involved hope so fervently for something that can cure dementia that they will seize any opportunity to believe that such a remedy lies within reach. This unfounded optimism is aptly characterised by the term ‘therapeutic illusion’. The mechanism underlying the therapeutic illusion makes people uncritical. It can, for example, result in patients and their carers being easily persuaded to take part in scientific research into new treatments, without stopping to think about the disadvantages. In the context of dementia, the influence of this therapeutic illusion is felt not only in patients and their carers, but also in therapeutic research, in the accounts published on this research in the literature, in media reporting, in decision-making on the inclusion of anti-dementia drugs in the national list of insured drugs, in the marketing strategies of the pharmaceutical industry, and in the participation of doctors in industry-sponsored trials. Pharmaceutical research is virtually entirely in the hands of the industry. Possibilities for independent scientific research are scarce.

- The authorities can safeguard scientific independence in relation to research into anti-dementia drugs via legislation, guidance and funding.

Interventions aimed at promoting well-being: No treatment exists which can cure dementia. It is precisely for this reason that symptom control and interventions that are capable of maintaining the spiritual well-being of the patient and carer at an acceptable level are so relevant. Major differences in the severity of the disease and in people's ability to cope with it call for individually tailored approaches and treatment plans. Good basic care is a prerequisite, and that includes regular assessment of the medical, psychological and social needs of the patient and carer and, if necessary, (referral for) treatment and expansion of professional assistance. The importance of detecting comorbidity in the patient and overburdening of the carer in good time cannot be overemphasised. The systematic monitoring of patients and carers is by no means always achieved in practice.

Efforts can be made to alleviate serious behavioural problems and psychiatric complications using psychosocial methods, psychoactive drugs or a combination of the two. Although such interventions have little scientific basis, the positive results that have been achieved with certain patients lead one to presume that these treatments contribute to well-being. But more is needed if they are to achieve maximum effect: a broadening of our understanding of primary and secondary symptoms, a practical classification of behaviour, rules on what action needs to be taken in connection with specific combinations of symptoms, and well-designed comparative research. All interventions have the following prerequisites: an individual needs assessment based on careful analysis of the problems, prior identification of the treatment goal, regular evaluation of effects and side-effects, and prompt cessation if the desired goal is not being achieved.

Education and information, together with emotional, practical and social support, are important elements in various forms of support that are aimed at increasing the caring capacity of carers. On the basis of the data available it is not possible to determine whether these activities are effective, nor can the converse be established. Results achieved in some studies are undeniably positive, however.

- Further research is needed in order to identify which elements are crucial to the success of the interventions.

Quality and organisation of care for dementia patients must be improved: The integration and cohesion of care services are often found wanting; crisis care is usually poorly organised; the training of professional carers is characterised by major variations; the Dutch regional care allocation authorities (RIOs) have a tendency to base their assessment of needs on scarcity; and the quality of home care and institutional care is not ideal everywhere. The organisations should be able to reduce the differences in quality standards through increased cooperation and by exchanging knowledge and experience about the content and organisation of care, but this process is impeded by rivalry and competition. Consensus is lacking on an integrated package of care services for dementia patients.

- A national care programme needs to be established, with quality requirements with regard to the content of the care and support that is provided to people with dementia. The tasks and responsibilities of the organisations, institutions and disciplines concerned must be clearly defined in this programme. In view of the

fragmentation that is encountered, it goes without saying that the authorities must take the lead.
- RIOs must work in accordance with transparent guidelines which include criteria for assessing the needs of the patient and the carer. Structural assessment of the independence and objectivity of the RIOs will enhance their credibility.

Care-service undercapacity is an urgent problem: In 2000 nearly 35% of dementia patients were accommodated in a nursing home or received residential care. Extrapolation of this percentage to the situation in 2010 indicates that 12,900 more places will be needed in nursing and for residential care for dementia patients than were required in 2000. This corresponds to an annual increase of nearly 1,300 institutional places or other services offering a comparable level of professional care (the equivalent of approximately six nursing homes per year). Even now it is not always possible to offer the necessary care, treatment and support when it is required. Also to be considered is the fact that the potential working population (people aged from 15 to 64 years) is set to undergo a further substantial decline. Whereas in 2000 there were still 63 potential workers for every dementia patient, this number is set to fall to 55 in 2010 and to just 27 by 2050. The suggestion that the problems of undercapacity in the care of dementia patients could be solved by offering more support to family carers must be rejected categorically. Caregiving is a physically and emotionally demanding daily task which often continues for years. People with dementia need to be able to rely on the fact that the content and range of the formal care and support that they receive will be such that their carers will not be overburdened. Providing family carers with more psychological support can boost their caring capacity, but it can also have precisely the opposite effect, by making them realise at an earlier stage that their limits have been reached and that admission to a nursing home is unavoidable. However, the threat of exhaustion on the part of the family carer is not the only reason for admission to a home; another reason is the patient's condition. Serious behavioural disturbances, disruption of the sleep-wake rhythm and complete incontinence are examples of problems that cannot be coped with at home, unless 24-hour nursing home care is available.
- A considerable expansion of home care services and an increase in the number of institutional places available for these patients is a prerequisite for providing adequate care.
- Assessment of the need for formal assistance must not be governed by the availability of a partner or other carers, but by the limitations experienced by the dementia patient concerned. The authorities must define more clearly than hitherto precisely what distinguishes family care from the normal responsibilities which members of a family and members of society as a whole bear towards each other.

Dementia patients are not by definition mentally incompetent: The ability to think rationally, think abstractly and reflect does not disappear instantaneously. Whether a person is mentally incompetent depends on the particular subject at issue and the complexity of the situation. The assessment relates exclusively to one particular type of decision and does not justify paternalism in other situations. As far as dementia is concerned, the interpretation of the term ‘competence’ is in certain respects not yet sufficiently concrete to allow for its use in everyday practice. § There is a clear need to define the term ‘competence’ more precisely in relation to dementia, and on the basis of this definition to establish which measurement techniques and instruments are suitable for use as aids in assessing the competence of people with dementia.

Room for improvement in the rules for scientific research on dementia: The fact that trial subjects deserve proper protection is beyond dispute, especially if they are not mentally competent. On the other hand, research involving dementia patients may be necessary in order to answer certain questions. There are ways in which the Medical Research Involving Human Subjects Act (WMO) could be made more applicable to dementia without actually encroaching substantively on the level of protection of trial subjects.

- Brothers, sisters and children should be deemed eligible to act as proxy decision makers in relation to scientific research.
- We need to be establish whether it is possible to give advance written notice of one's consent to participate in scientific research into dementia and whether declarations of this kind can be framed in an ethically and legally acceptable form.
- According to the recent EU directives, non-therapeutic drug research is not permitted in relation to mentally incompetent patients. The authorities must make every effort to safeguard the opportunity which the WMO currently offers to perform research of this kind.

The written advance directive is an important instrument: Advance directives serve an important role as guidelines in decisions on actions that need to be taken on behalf of a patient with dementia.

- In order to prevent misunderstandings and problems of interpretation, it is to be recommended that people who wish to draw up an advance directive on medical treatments or on the active termination of life in dementia should discuss this wish with their GP in good time – preferably before the possibility that they may be suffering from dementia arises.
- The authorities would be well advised to inform citizens about the importance of drawing up advance directives and about the opportunities that exist for doing so.

Respect and communication are important in approaching dementia patients: Dementia patients will themselves rarely visit a doctor. Generally it is the carers who do so. Doctors and other carers must realise that examinations designed to establish whether a person is demented violate that patient's rights unless his consent has first been obtained. Proper care means acting in consultation with the patient and his family. Even though the doctor cannot offer a cure, respect for the patient and the family compels him to disclose the state of affairs so that those involved can prepare themselves for what is to come. The diagnosis of "dementia" does not mean that the patient is no longer in a position to express wishes. In order to discover those wishes, one must take the time to communicate *with* the patient and not merely *about* him. Even if there is sound justification for making decisions on the patient's behalf, carers must be alert to his verbal and non-verbal reactions and they must consider these responses when taking actions. The very fact that in our culture the emphasis is placed on verbal communication poses a major problem for people with dementia. In order to prevent these individuals from becoming marginalised in society, the bystanders will need to familiarise themselves with non-verbal means of communication.

- Priority needs to be given to research into the subjective experience of people with dementia.

Termination of life on request is complex in dementia: There are people who wish to determine the moment of their death themselves in the event that they should become demented. They find the disintegration of personality that is associated with dementia humiliating and unacceptable. In analysing possible motives for wishing to die, a distinction needs to be made between feelings and values on the one hand, and facts and probabilities on the other. According to current law, the existence of ‘unbearable and hopeless suffering’ is a prerequisite for the termination of life at the patient's request. In fact, this encapsulates most vividly the inherent tragedy of dementia: if the situation which one feared or foresaw actually comes about, then one is no longer able to perceive it as such. Under current law, the presence of dementia does not constitute sufficient grounds for termination of life at the patient's request or for assisted suicide, since there is no evidence that the dementia itself causes patients unbearable suffering. The possibility cannot be ruled out that the fear which a patient experiences in the initial phase of dementia can in isolated cases be characterised as unbearable and hopeless suffering. Because the diagnosis of dementia can generally only be established with sufficient certainty once the patient is no longer capable of making major decisions, assistance with suicide will only be justified in exceptional cases. Active termination of life does probably fulfil the demands of current legislation in cases where a person is evidently suffering unbearably from secondary disorders. People who declare in an advance directive that they wish their life to be terminated if they should become demented must realise that doctors have to comply with the statutory requirements of due care. This imposes limits on the opportunities that exist for acceding to their wish for death. It is possible for people to hasten their death by stipulating in writing that they refuse any form of treatment from the moment at which dementia is diagnosed. Under the Medical Treatment Agreement Act (WGBO), the doctor must respect such a declaration.

- Because a section of the population has the express wish to be able to exert influence over the end of their lives, it is desirable that the public debate with regard to active termination of life in dementia should continue.

Over-simplifications colour perceptions : Public perception of a disease is the key factor in determining the way in which people who have that disease are treated and the attitude that people assume in relation to the eventuality that they might themselves develop the disease. “There is nothing that can be done about dementia ”, “People with dementia are inferior to others”, “Dementia is humiliating”, and “The nursing home is the worst outcome for people with dementia”. These are examples of some of the views that determine our perceptions of dementia. Although there can be no doubt about the seriousness of dementia, certain distinctions need to be made. Dementia is incurable, but its symptoms can, in fact, be alleviated by selecting the right form of care, support and treatment. People with dementia are still human beings are not inferior and they do deserve the best possible care. Substandard care within institutions disposes the general public to the view that admission to a nursing home is humiliating and must be avoided, whatever the cost. However, admission to a nursing home is sometimes the best course of action for both parties involved. It is not inconceivable that the manner in which the authorities emphasise the desirability of delaying admission could reinforce the feeling that it is wrong to allow a relative who has dementia to be admitted to such an institution. This misconception does an injustice to patients with dementia, to their carers and to the people who work in the institutions. Whilst there may not be any cause for optimism with regard to dementia, it is equally misguided to place undue emphasis on the negative aspects.

Chapter **1**

Introduction

1.1 Request for advice

Dementia is a major cause of severe invalidity in elderly people. The number of elderly people in the Netherlands is set to increase substantially over the coming decades. This increase will be associated with an increase in the number of dementia sufferers. It is therefore anticipated that dementia will make increasing demands of informal care and of the health service system. It was against this background that, in May 1999, the Minister of Health, Welfare and Sport requested advice from the Health Council on the current level of knowledge with regard to dementia, with particular reference to Alzheimer's disease, and its significance for the treatment and care of patients with this disease (Annex A). On 26 January 2000, the Vice President of the Health Council installed the Committee that prepared the current advisory report (Annex B).

1.2 Interpretation of the request for advice and scope of the report

More than 90 percent of dementia sufferers are above 65 years of age. Other conditions, such as the hereditary forms of Alzheimer’s Disease (AD), occur in individuals below the age of 65. The Committee has decided to focus on dementia in the elderly. One consideration here was that the request for advice was prompted by an ageing population. Another is that dementia in the younger group of patients is, in many ways, fundamentally distinct. Aside from differences in the form of the disease, the social and psychological complications in younger patients demand a specific approach. Inclusion of this approach in a general recommendation on dementia would not do it sufficient justice. For similar reasons, the Committee has decided against including in this report the topic of dementia in mentally handicapped individuals.

The title of the request for advice was ‘Alzheimer’s disease’. The request itself sometimes alludes to ‘Alzheimer’s disease’, while elsewhere it uses the more general term ‘dementia’. This is partly associated with the point of view that is being presented. When the focus is on future care requirements, then the ‘dementia’ category is extremely relevant, however, this would be too broad a context in which to discuss the development and application of new medicinal products. It does not eliminate the need to accurately distinguish between the various diseases that cause dementia. In everyday language, there is a tendency to regard ‘Alzheimer’s disease’ and ‘dementia’ as being synonymous.

This report deals with dementia, in the broadest sense of the term. In its deliberations, the Committee has endeavoured to shed light on dementia from various distinct points of view: biological, medical, psychological, social, ethical and legal. Where appropriate, the Committee has distinguished between the clinical pictures that cause dementia, with the emphasis on Alzheimer’s disease and vascular dementia, which together account for more than 90 percent of all cases of dementia in the elderly.

1.3 Scientific literature

There is extensive scientific literature on the subject of dementia. Several tens of thousands of articles have been published in the past five years alone. The references used for the purposes of this report (almost 800 in number) are a mere fraction of this total. The following databases were consulted: Medline, PsycINFO, Social SciSearch, Sociological Abstracts and Bioethicsline. The report is primarily based on reviews, guidelines and other survey articles published from 1995 until September 2001. Where necessary, additional information was drawn from relevant earlier publications and more recent research results. The literature dealing with topics for which no survey articles were available was searched using search profiles tailored to the topic in question and by the manual screening of all articles in the above databases dating from mid-1999 to September 2001.

1.4 Structure of the report

In the following chapter, the Committee offers a view of what dementia involves and of what it means to go through the process of dementia, both for patients and for their close friends and relatives. The third chapter deals mainly with current knowledge of the biological causes of dementia. The fourth chapter is devoted to risk factors and to possible preventive measures. In the fifth chapter, the Committee considers the diagnosis of dementia. This also addresses the use of DNA diagnosis and the state of affairs with regard to early detection. Chapter 6 is entirely devoted to the new anti-dementia drugs. Chapter 7 contains a survey of the opportunities for optimising dementia patients' quality of life. Some of the subjects addressed by the Committee are psychosocial interventions for patients and informal carers, and the use of psychotropic drugs. The matter of which decisions should be left to dementia patients and which should not, and who should make decisions on their behalf when they are no longer able to do so, is the subject of chapter 8. Other issues discussed include the meaning of advance directives and the applicability of the new euthanasia law to individuals suffering from dementia. In chapter 9, the Committee shows that dementia is one of the most important social problems of our time. One of the points considered involves an estimation of the number of dementia patients both now and in the period up to 2050. The Committee draws attention to the consequences that this will have for the organisation of care. The chapter ends with a review of the numerous misconceptions associated with dementia, which tend to colour people's views of this condition. Chapter 10, the final part of the report, contains several points that have not previously been discussed but which the Committee wishes to highlight. The References section is followed by a number of Annexes. The final Annex (E) contains a glossary.

1.5 Men and women

The Committee has adopted the convention of referring to individuals as male, even though most dementia patients, carers, physicians and other health care providers in this field are female. It is absolutely the case that where 'he' and 'him' appear in the text, they can also be read as 'she' and 'her'.

Chapter 2

About dementia

Dementia is a severe and ultimately fatal disorder based on a progressive deterioration of brain function. No description of dementia in purely medical terms can adequately convey the scope of this problem. The repercussions of this condition for the individuals concerned and for those closest to them are deeply tragic.

2.1 The ‘disease’ dementia

Dementia is not a single, distinct disease, but a syndrome. This is a combination or succession of linked symptoms and clinical signs. There are a considerable number of disorders in which dementia can occur. In some cases of dementia, the condition is caused by an underlying disease. When this is treated the dementia disappears. However, this is the exception rather than the rule. Dementia is usually irreversible. This report deals with the irreversible form of dementia. Dementia in the elderly is primarily caused by Alzheimer’s disease (AD) and by changes in the brain’s blood vessels, so-called vascular dementia. It is also quite common for both forms to occur in combination (3.2.4).

In older people, as the years go by, it is not unusual for them to experience some difficulty with cognitive processes such as remembering, abstract thought and reasoning. In the case of dementia, however, there is an accelerated deterioration in all of these areas. The term dementia is a clinical diagnosis that conveys nothing of the cause. The clinical signs are many and varied, but certain symptoms predominate. The most widely known and internationally accepted diagnosis criteria are those of DSM-IV

(APA94). The Dutch criteria for the diagnosis of dementia are based on this. Patients are said to be suffering from dementia when they exhibit disorders in observation, thinking, language and acting that demonstrably restrict their ability to function and which are not the result of a delirium (see Annex C). Other criteria, specific to the diagnosis of AD and primarily intended for research purposes, are those devised by the NINCDS-ADRDA working group (McK84).

The rate at which the disease advances and the pattern of deterioration differ from person to person. Phases marked by rapid cognitive deterioration are interspersed by periods with a slower rate of deterioration. The switch from one phase to another is quite unpredictable (Agü98b, Gel00, Jos99, Swa98b, Wil00b). It is often asserted that the disease process in patients with vascular dementia occurs more intermittently than it does in patients with AD. In practice, it is very difficult to clearly differentiate between the clinical profiles of these forms of dementia (Bal01b, Hijd01, Kun00, Ver95, see also 3.2.4).

Individuals suffering from dementia generally die before those of their contemporaries who do not suffer from this disorder (Agü99, Bia01, Ost99, Wol01). Post-diagnosis survival is extremely varied, with published figures ranging from three to twenty years (Ben00b, Kha98). A proportion of patients die before reaching the final stage of dementia. Estimates of median survival range from three to nine years (Bia01, Wol01). As yet there is no comprehensive picture of the factors that determine the rate at which dementia develops (Agü99). However, using certain patient characteristics, it appears possible to predict whether the disease will progress rapidly, less rapidly or very slowly (Cla98b, Doo01). Women tend to survive longer than men (Gam99).

2.2 Symptoms and course of the disease

Despite substantial individual variations in symptoms and duration, the process of dementia proceeds along broadly identifiable lines (Ben00b, Hop99a). The process of deterioration is generally very gradual and, in retrospect, has usually been going on for many years before dementia is diagnosed (Alm98, Bac01, Eli00, Lar00, Wol98a). For instance, the initial signs may be that individuals encounter more difficulties in dealing with complex situations or in taking major decisions. In others, the early phases may be characterised by an inability to remember familiar names, telephone numbers, as well as recent conversations and events. Many individuals are initially capable of compensating for their incapacity, for example by making greater use of notebooks and diaries, and by avoiding situations that they cannot deal with. When the individuals concerned, or those close to them, notice the first subtle changes, they usually tend to see this as a ‘normal’ sign of ageing. It finally becomes obvious, to those closest to the patient rather than to the patient himself, that the patient in question is consistently unable to recall recent events and conversations, and is unable to deal properly with everyday matters. At this point they realise that this may be more than just simple forgetfulness. Only then an approach is made to the GP, and it becomes clear that the individual is suffering from dementia.

As the condition advances, there is a loss of judgement and of the ability to control impulses. This can lead to the neglect of clothing and personal hygiene, to inappropriate comments and to obscene language. The patient rapidly forgets what he is doing, which can lead to situations that are hazardous to him and others. Eventually, he is unable to function properly without the help of others. There is increasing disorientation with regard to time and place, and deterioration in the ability to recognize people. It becomes increasingly difficult to remember words and to understand what others are saying. Many patients exhibit personality changes. Patients commonly suffer from sleep disorders, disruptions to the circadian rhythm, and a tendency to wander (Alg99, Mar00b, Vol01). Patients also become incontinent.

The dementia sufferer gradually loses all contact with the present. He loses the ability to recognise objects, situations and people, even those who were closest to him. There is a total loss of the ability to conduct verbal communication. This is followed by a general increase in frailty and by a loss of weight, loss of the ability to walk, loss of the ability to chew and swallow, and an increased susceptibility to infection. Patients generally die from concomitant diseases. Cardiovascular diseases and pneumonia are common causes of death (Kam00).

Many patients exhibit symptoms of anxiety, suspicion, depression, anger, agitation or apathy. These non-cognitive symptoms are designated as behavioural problems, behavioural disturbances, secondary symptoms or as BPSD (Behavioural and Psychological Symptoms in Dementia, APA97). These symptoms can occur throughout the entire disease process, even before a clear diagnosis has been made (Asa00, Ben00b, Bia01). Their extent, severity and nature vary from person to person (Fer01, Hau00b, Hin97, Kee99, Pet98, Pur00, Rei98). There is still no clarity regarding details of the link between cognitive symptoms and non-cognitive symptoms. Some feel that the existence of a connection has not been established (Asa99, Hop99a, Hau98), while others state that non-cognitive symptoms mainly occur when the patient's cognitive condition deteriorates rapidly (Chu00). Still others contend that there is just such a link between certain non-cognitive symptoms, particularly delusions, activity disorders and hallucinations (Har00b).

Until recently, psychological function disorders and behavioural disturbances were seen purely as the result of brain degeneration and the associated loss of control mechanisms. The view is gradually gaining ground that dementia has far-reaching psychological and social repercussions, and that these contribute to the disturbance of psychological equilibrium (Che98, Der01, Drö99a, Ehr99, Fer01, Hau99, Kas00, Opi99, Pur00, Rei98, Sco98).

2.3 Psychosocial repercussions

Dementia evokes feelings of powerlessness and desperation in patients, families and carers alike. The situation confronts them with life’s vulnerabilities and ultimate lack of control. The lives of the family members who are caring for the patient gradually become entirely dominated by the disease.

2.3.1 The patient

Communication is a complex process involving the senses and higher brain functions, including the memory. It is precisely these higher, cognitive functions that become eroded in dementia sufferers. It is therefore inevitable that the ability to communicate will be adversely affected (Pow00). Patients become gradually less able to understand the spoken and written word, finally losing this ability completely. At this point, the patient must rely on other aspects of communication when interacting with others, such as phonation, a smile, a sad expression, a handshake, a touch.

Research into the perceptions of dementia sufferers is still in its early stages. The understanding has gradually dawned that it is both possible and important to discuss their experiences with them (Fri01a). There are certain psychological methods that can be used to enable even those with severe dementia to convey something of what they are experiencing (Mil94). Such patients commonly experience anxiety and anger about their disease, panic when they don’t know which way to turn and frustration about simple everyday things that are now quite beyond them. Patients are often too ashamed to discuss their failing faculties, and they feel that they are a burden to others (Kea95, Gil00). If they are no longer able to speak then it is difficult to find out how they feel, especially as they have a different perception of reality. For those who take the trouble to dig deeper, certain statements and emotions that initially seem to be unintelligible can acquire meaning. So-called emotion-oriented care, a new approach to the care of dementia sufferers, is based on the idea that creating connections with the patient’s perceptions is beneficial to their quality of life (7.2.4). In order to properly flesh-out this approach, it is essential that systematic research be conducted into the perceptions of dementia sufferers.

Insight in the disease

Many of those who develop dementia realise that their memory is starting to fail (Act99, Gil00, Kea95, Phi98). This realisation can occur long before a diagnosis of dementia is made. People react in very personal ways to such a painful perception. Some may cling to the idea that all older people tend to forget things, dismissing the problem with a joke, while others tend to deny that anything is wrong. Some patients react with rage if confronted with the things that are going wrong. They are inclined to blame others, to withdraw into gloom or to avoid taking any initiative in order to minimise the risk of making mistakes (Ehr99, Kas00, Sch01).

The literature dealing with realisation of and insight in the disease is sometimes confusing, since there are no clear definitions of either concept. Many patients realise, certainly in the early stages, that something is badly wrong with their memory. Even while denying that anything is wrong, they may still experience psychological pain at an instinctive level (Ben97, Mie00b). However, there is more to insight in and understanding of a disease than simply realising that something is wrong: it implies that individuals are aware that they are suffering from the disease in question, that they are aware of the repercussions of that disease and that they are able to associate their own behaviour and symptoms with the disease. The cognitive abilities of dementia sufferers are usually not equal to such a task (Fai97, Har00c, Ver95, Zan99). As the disease progresses, there is a further deterioration of cognitive abilities, making it even more unlikely that dementia patients have any understanding of their disease.

Seeing the way in which dementia sufferers react, outsiders often think that they have no idea that anything is wrong. However, both published studies and the accounts of those who work with dementia patients indicate that growing demented is something of an emotional roller coaster for the patients. They may indeed be aware that they are losing control, furthermore they may become depressed, distressed or fearful, realising that many things are now quite beyond them. In addition, the continual awareness of making mistakes often undermines their self-confidence and their self-respect (Ehr99, Kas00, LaB95, Mie00a, Pea01, Woo01).

Some researchers view the failure of dementia sufferers to recognize their disease simply as a psychological defence mechanism that psychotherapy might breach (Ben97, Che98, Fai97, Kit97). The Committee takes the view that these researchers are overlooking the fact that such patients often lack the cognitive skills that are needed for insight in their disease.

2.3.2 *The patient’s close friends and relatives*

In particular, close friends and relatives have great trouble with the patient’s personality changes and with behavioural disturbances, more so than with their forgetfulness and deteriorating functional skills (Pot96a). They can be particularly embarrassed by behaviour that is normally subject to taboos, such as aggression and sexual disinhibition, even when they are aware of the background of the disease. People are generally not prepared to be open about the fact that someone is suffering from dementia, particularly with outsiders. They are more inclined to conceal the patient’s deterioration from the outside world.

From the point of view of close friends and relatives, the progressive deterioration also represents the gradual and irretrievable loss of an individual. Living with a dementia sufferer mainly means living with loss. When a close friend or family member dies, those left behind can start to deal with their grief. For those caring for dementia sufferers, on the other hand, loss is a process of gradually saying goodbye while the individual is still alive. Dealing with grief in cases of dementia, which is also known as ‘anticipatory grieving’, is a complex process. In the absence of actual death, the loss is never definitive and it remains hidden to outsiders. Sometimes the carers find themselves wishing that the patient’s death will come sooner rather than later, and then the thought itself gives rise to feelings of guilt. In many families, the subjects of mental deterioration and memory problems are strictly taboo. This prevents the patient’s close friends and family members from sharing their feelings about their loss. This too makes it difficult for people to deal with their loss (Ehr99, Mie00b, May01).

Dementia patient’s close friends and relatives take on the lion’s share of their care (9.1.3). It is particularly the partners of patients and their adult daughters (or daughters-in-law) who take on this so-called family (or informal) care. A patient’s close friends and family are familiar with his personal history, values, wishes and preferences. This makes them pre-eminently qualified to care for the patient in a way that is best suited to his requirements. At the same time, the dependence that is associated with dementia disrupts the existing equilibrium within the relationship. The partner must take on a wide range of tasks and decisions on behalf of and concerning the patient, while it becomes increasingly difficult to discuss things with the patient himself. Inevitably, the patient receives less and less companionship and reciprocity (Fea98, Gon99b, Rab98). Children caring for a parent who is suffering from dementia then have to ‘mother’ their own father or mother. This drastically changes the nature of their relationship.

Family care is an exceptionally onerous task; one that often has a serious impact on a person’s well-being and health (Don97, Drö96b, Dun98, Pot96a, Sch95, Sch99f, Sch99g, Wim99, Wije97). The patient's memory problems, coupled with the carer's awareness of the irreversible nature of the disease process that is affecting someone they love, can give rise to feelings of depression. Those who are caring for a close friend or relative with dementia have difficulty in adapting to the patient's limitations and behavioural changes, and with finding ways to deal with their own emotions (Dui92, Pot96a, Drö96a). This can cause them to experience feelings of incompetence and loss of identity, which can eventually result in chronic stress. The threat of loneliness is very real. Living with a partner who has dementia means being together, but separated from one another, since the patient is in a world of his own. The partner-carer often has little or no time for other social contacts. Caring for the patients and supervising them demands a great deal of time and attention. Their unpredictable behaviour may make their partner reluctant to leave them alone, and even more unwilling to take them along when paying a call on someone else. Thus, little by little, the social network shrinks, and potential sources of support fade away. The risk of social isolation is far from imaginary, and this is known to take its toll, even when the carer is no longer caring for the patient, following the latter's death or admission to hospital (Elm98, Orr00, Teb00, Zar99). Caring for someone with dementia is also physically demanding, especially when the patient is incontinent and requires assistance with washing or dressing, or if his circadian rhythm is disrupted (Kan97, Wim99). Children taking on a carer's duties often have a family of their own to look after, and a job that demands their attention. They often experience considerable difficulty in balancing their various duties and responsibilities (Sal00b, Ste01).

The availability of professional care is often of critical importance in determining whether the informal carer is able to continue caring for the patient. In the absence of normal professional care, carers themselves can arrange for the patient to receive supplementary care and guidance. However, that is only an option for those with sufficient financial resources. Moreover there are indications that dealing with professional assistance and establishing an adequate relationship with professional practitioners can also be a source of tension for carers (Buij92).

Society is becoming increasingly aware that caring for a close friend or relative with dementia not only requires a great deal of patience, but that it also imposes a considerable physical and emotional toll. However, we should not lose sight of the fact that some people find it enormously satisfying. As yet, little consideration has been given to this aspect in scientific circles (Mur99, Pie01). As with other chronic diseases, the motivation to care for a partner or family member with dementia stems partly from a sense of duty and largely from emotions (compassion, love and affection). Other factors are the nature of the previous relationship (a patient-carer relationship or a more intense contact), personality (a caring nature in general), practical considerations (living nearby) and views related to a social position (unmarried, childless). For partners and children, the role of carer is often not a matter of conscious choice. They just take on the job, as if it were naturally understood that they should do so (Dui92).

Chapter 3

Causes and development

3.1 Causes

As previously mentioned, Alzheimer’s disease and vascular dementia are the principal types of dementia in the elderly. In addition, dementia is frequently associated with Parkinson’s disease (Ham99a, Vos95). Research carried out about ten years ago in Rotterdam revealed that 72 percent of dementia sufferers also had Alzheimer’s disease, 16 percent had vascular dementia and six percent had Parkinson’s disease (Ott95, Ott96a, Ott97b). These diseases can also occur in combination, or in association with other brain disorders. Several dozen other disorders are known to be associated with the development of dementia (Mor00b, Bia01), including intoxication (and intoxication with medications), Creuzfeldt-Jakob disease, AIDS and brain tumours. In terms of the numbers involved, these are of subordinate importance in the elderly, which is why they have been given no further consideration in this report.

In dementia, the underlying disease processes are almost always irreversible. In rare cases, the underlying disorder can be treated, which causes the dementia to disappear. Some examples are severe depressive disorders and intoxications (including intoxication with medications). The number of cases of dementia that can be treated amount to no more than a few percent of the total (Cre99, Dal99, Win94).

3.2 Mode of development

The examination of brain tissue from deceased dementia patients has unequivocally established that dementia is a brain disease. When developing rational therapies, it is important to study the biological backgrounds to the development and course of dementia. In addition to the use of brain tissue from deceased patients, researchers also use transgenic animals, exhibiting certain characteristics of the disease. In rare cases, samples of brain tissue (biopsies) from living patients are also available.

3.2.1 Alzheimer's disease

The brains of deceased AD patients exhibit widespread lesions (Bau96, Bra98, Hym97, Jel98, Swa98a). In macroscopic terms, such brains are noticeably smaller in both weight and volume. The brains appear to be shrivelled. Characteristic features at the microscopic level are large numbers of plaques and tangles, a reduction in the number of synapses, and other features indicating inflammatory processes and cell loss in certain areas of the brain.

Plaques and tangles are microscopic structures, first described at the start of the last century by the German pathologist Aloïs Alzheimer, after whom the disease was later named (Mol98). The plaques are situated between the neurones and consist of a deposit of proteins surrounded by degenerating axons. One major component is beta-amyloid, a protein. The tangles are located in the neurones, both in the cell bodies and in the protrusions (dendrites and axons) normally used for intercellular communication. They are tangled masses of a protein that normally functions to help cells retain their shape, and that is also involved in transporting substances within the neurones and their protrusions. There is a statistical link between the extent of these structural anomalies and the severity of the dementia. However, some individual cases may not conform to this general rule. In some individuals with few symptoms of dementia, or none at all, post-mortem examination has revealed the presence of numerous plaques, tangles or both. Other patients with clear signs of dementia have only plaques or only tangles in their brains (Dav99b, Gol012200, MRC01, Pri99, Xue00, Yam96).

Without synapses, brains could not function. These are structures that connect neurones to one another, thereby forming the functional networks that are involved in the performance of complex tasks. Information exchange via the synapses occurs by the release of neurotransmitters (chemical messengers), such as acetylcholine, glutamate, dopamine and glutamine. In AD patients, anomalies occur which indicate deterioration in the function of various neurotransmitter systems (Cac99, Gre98, Min99).

Certain areas of the brain, such as the cerebral cortex, show signs of atrophy. Many cells have disappeared, while others have a shrunken appearance and are no longer able to function or to produce neurotransmitters (Swa98a). Signs of inflammation are usually present.

The significance of neuropathological changes and of their interrelationship to the development of AD has been the subject of research and lively debate for many years. The same is true of the relationship of these changes with the symptoms seen in the various stages of the dementia process. One recurrent theme in the discussions is whether the changes found are the cause or a consequence of the disease (Ros00a, Swa98a). Our current understanding of this issue is mainly based on studies of the brains of deceased patients. As a result, most of the data relates only to the final stages of the disease. While this provides a great deal of scope for the interpretation of results, it makes it difficult to furnish proof. Another handicap is the lack of an animal model of AD, combining all of the familiar symptoms (Dic99, Leu00, Tak00).

There are various theories concerning the pathogenesis of AD. Currently the leading one is the amyloid-cascade hypothesis. According to this theory, AD is caused by a disruption to the metabolism of beta-amyloid, minute amounts of which are normally present in healthy cells. When the equilibrium between production and breakdown is disturbed, the concentration of beta-amyloid rises and it precipitates between the brain cells in the form of plaques. It is suggested that this gives rise to inflammation reactions and tangles, finally leading to the death of neurones (Har92, Nev98, Sel94, Sel00a). A great deal of research is presently being carried out into molecular genetic aspects of the beta-amyloid balance in the brain. The objective is to develop methods of restoring the equilibrium between the production and breakdown of beta-amyloid. These might form the basis for a therapy (Gla00, Sel00b, Sel01).

There are numerous other theories, many of which partially overlap. Some take the view that it is the tangles rather than the plaques that are responsible for the neurodegenerative process (Bra98, Goe98, Har99a, Sas00, Tha98). Still others consider both plaques and tangles to be a consequence of AD, rather than the cause. Many theories have been put forward identifying various factors as the primary cause of the disease. Some place the blame on the accumulation of substances like oxygen radicals, cell components and other breakdown products (Car00, Des01, Mat00). Others point to a reduction in the functioning of neurones and synapses, and to a disruption of functional networks (Are01, Bau96, Cot00, Mes00, Swa98a, Ter00b). Still others suggest that the differentiation of neural stem cells becomes impaired (Arm01), that there is a deterioration of glucose metabolism in the brain (Cra99, Fro98, Hoy00), that minor blood vessels in the brain fail to function properly (Cho01, Far01, Shi00, Tor00), or that a combination of the above-mentioned factors is to blame (Hei00).

Inflammatory changes in the brain are part of the disease process, and are probably involved in the development of the symptoms (Aki00, Eik98, Pop98, Rog00a, Ros00a). They are seen as a good target for the development of therapies to alter the course of the disease.

3.2.2 *Vascular dementia*

According to the definition used by neuropathologists, vascular dementia covers all forms of dementia involving anomalies in the blood vessels that supply the brain (so-called cerebrovascular accidents), with no involvement of the AD neuropathology discussed above (Rom93). This may involve numerous minor infarctions (which produce multi-infarct dementia), a single cerebral infarction or cerebral haemorrhage in a 'strategic' area of the brain, or pathological changes in the white matter (leukoaraiosis). These anomalies can be detected using imaging techniques (CT scan, MRI) on living patients (CBO97, Mer00).

Although a great deal of research has been carried out into the significance of cerebrovascular changes in terms of the occurrence of cerebral infarctions or haemorrhages, there have been very few studies of disease mechanisms in vascular dementia compared to the body of work on AD. The reason for this is presumably that vascular dementia is a collective term for a range of vascular disorders, each with its own mode of development (Rom93, Nye98, Ver96). The clinical criteria for dementia represent yet another barrier (Annex C). Since these are strongly biased towards AD, they do not adequately cover all forms of vascular dementia (Bow99, För98). One major problem is that the absence of AD neuropathology (a crucial criterion for the diagnosis of vascular dementia) can only be established post-mortem.

3.2.3 *Dementia in Parkinsonism*

Like AD, Parkinson's disease is a neurodegenerative disease. Patients with this disease are at increased risk of dementia (May98a). The brains of these patients exhibit characteristic pathological features, so-called Lewy Bodies: microscopic structures that are mainly located in the cells of the brain stem (Bra98, För99, Mat98, Mit00a, Per98, Vos95). In addition, Parkinson's patients often exhibit the plaques and tangles that are so characteristic of AD. It is not clear how Lewy Body dementia and dementia associated with Parkinson's disease should be distinguished from AD (Hur00, Mat98, Vos95). There is more overlap between these clinical pictures than might be expected from the probability of developing any one of these diseases alone. There is a possibility that Lewy body dementia, Parkinson's disease and Alzheimer's disease result from common pathogenic mechanisms. It may also be that Parkinson's disease makes the brain more vulnerable to AD (Bra98, Har98, May98a, Mor98b, Per98).

3.2.4 *Heterogeneity*

In dementia patients, changes in the brain that indicate AD often occur in combination with other neuropathological changes (including cerebral infarctions, leukoaraiosis, Lewy bodies and hippocampus sclerosis). As stated, the plaques and tangles that are so typical of AD are also seen elsewhere, in Parkinson's patients for example. Nor is it unusual to find vascular anomalies in combination with Alzheimer's pathology (Gol98, Ior99, Rom99, Sko99). Pure AD neuropathology, unaccompanied by vascular or other anomalies occurs less frequently than was initially thought, as does pure vascular pathology without AD. This is certainly true of patients aged 80 and above, who make up around 75 percent of the total (Fel01a, Goo00a, Gou99, Hol99, Kal99, Kra00, Lim99, Lop00a). Leaving aside the issue of the bias that this introduces into the scientific literature, this conclusion may well have implications in terms of treatment. Even in patients who are apparently suffering from AD, additional factors might also be useful targets for therapeutic interventions. This applies, for instance, to the treatment of the vascular components in AD (Ben01, Dib01, Gau01).

The recent finding that vascular disorders and AD often occur in combination, and that risk factors for atherosclerosis also increase the risk of developing AD (4.1.5), raises the question of whether this is simply a matter of common risk factors or whether there might be a causal relationship between vascular disorders and AD (Bre00, Far00a, Gra00a, Gro00, Kal00, Mor00b, Rom99, Tor00). Some have put forward the idea that cerebrovascular anomalies might render the brain more vulnerable to AD or might aggravate its symptoms (Esi99, Esi00, Goo00a, Hac00, Hir00). The more that is discovered about AD and vascular dementia, the smaller the differences between the two seem to become (Agü00, Gro00, Sma01).

The field of dementia classification is currently experiencing a period of great activity. The scientific situation in this field is still very unclear. It is becoming increasingly clear that AD, in accordance with the current criteria, is a clinical picture with a great many variants (Goo01a, Pet98, Shu98).

3.3 The importance of autopsy

It is essential, if we are to develop therapeutic strategies for dementia, to understand the disease mechanisms and biological processes that give rise to dementia. For obvious reasons, samples of brain tissue from living patients are only available in rare cases.

Researchers are dependent on brain tissue obtained during autopsy. In addition to fundamental research into the development of dementia, autopsy of the brain is also important for clinical research and for the quality of medical treatment (5.1.1). Comparing the brains of people who did suffer from dementia with those who did not, makes it is possible to associate clinical signs with brain anomalies.

3.3.1 Legal framework

Autopsy in cases of dementia involves removing the brain from the skull. If the aim is to store the brain for subsequent research then preservation will be necessary. The conduct of post-mortems is regulated in the Burial and Cremation Act. The purpose of this is to allow diagnostic post-mortems to be conducted with the aim of determining the cause of death, as a test of the medical treatment provided. In practice, this objective is sometimes more broadly interpreted: material obtained from autopsies is also used for scientific research that is not directly related to disease-oriented diagnosis.

In order to conduct a routine autopsy (i.e. one not related to a crime) the law requires that permission be obtained from the individual concerned while he is still alive. Failing that, it is possible for relatives to give permission following that individual’s death. While the Burial and Cremation Act does not actually stipulate that separate permission is required for the removal of the brain, the Dutch Pathological Society nevertheless recommends that such permission be sought, in the context of providing good care (providing appropriate information to the next of kin). There are no legal stipulations concerning the removal of material for subsequent scientific research. As long as this is the case, at the very least it would seem reasonable to impose the same requirements that apply to routine autopsies. Those requirements involve the adequate provision of information concerning the proposed use of this material and the explicit permission either of the individuals concerned or that of their next of kin. Where autopsies are mainly carried out for the purposes of disease-oriented diagnosis, additional permission must be obtained, for the storage and use of material for scientific purposes. If this scientific research requires that the material obtained be linked to the deceased individual and related to his medical details, then such permission must be obtained from the individual concerned while they are still alive, or from their representatives. Next of kin cannot give permission for third parties to inspect the deceased’s medical details. The same goes for scientific research. In the latter case, the researcher can invoke art. 7:458 BW (WGBO), which states that inspection for the purposes of scientific research of patient records without the patients’ permission, is only allowed if it is not reasonably possible to ask for such permission. There are a number of conditions attached to this: no disproportionate impairment of people’s privacy; the data is essential to the research; the research is of far-reaching significance; the patient is known not to have harboured any objections. This article, however, is specifically intended for use in those cases in which it was impossible to obtain prior permission.

The lack of legal statutes governing the collection, storage and use of human tissue for scientific purposes creates an unclear situation for those involved, and it results in variable approaches in practice procedures. Appropriate legal measures are under preparation. One is a law involving authority over human tissue samples; another is a legal framework for safety and quality requirements for the use of human tissue. In the interests of legal security and of the progress of scientific research, the Committee urges that these measures be introduced as soon as possible.

3.4 Practice

In the Netherlands, the Netherlands Brain Bank (NHB) plays a leading role in the collection of brain material from patients with and without brain disorders. The objective is the study of neurological and psychological clinical pictures. Alzheimer's disease is extremely important in this context. The NHB has developed a brain codicil. This enables people to place on record the fact that they are prepared to donate their brains for medical research after their death, and that they give the NHB permission to inspect their medical file. Brain autopsy should, by preference, be carried out within a few hours of the donor's death, in accordance with a fixed protocol (NHB98). The NHB motivates codicil bearers, collects and documents the brain material and makes this available to research institutes at home and abroad.

While there is an enormous need for human research material, very few brain autopsies are carried out on deceased dementia patients. While the number of autopsies carried out has been generally declining for several years (Twe99), specific factors are presumably involved, such as the fact that dementia patients often die in nursing homes. The Committee recommends that ways be found to correct this deficiency, through an analysis of the obstacles that are encountered in practice.

Chapter 4

Risk factors and prevention

AD and vascular dementia are typical examples of multifactorial disorders, in which one specific cause cannot be singled out. Whether or not someone develops the disease is governed by a complex interplay of genetic susceptibility and environment (GR98a, May98a, Ros00a). The hereditary forms of dementia are an exception to this, since they are attributable to mutations in a given gene.

Our current understanding of the factors that determine the risk of dementia is mainly based on epidemiological studies. Such studies usually start by identifying factors whose frequency of occurrence in dementia patients differs from that in other individuals (case-control study). The drawback of this type of study is the introduction of bias, for example where the factor being studied interferes with the death rate. Any linkage found by this means provides an indication, but not an ironclad certainty, that a risk factor is involved. Greater certainty can be obtained using prospective studies: studies in which exposure to the factor in question is established before the disease develops.

The purpose of listing risk factors is to facilitate the identification of factors that might provide a basis for developing preventative measures. Another important element is the generation of hypotheses concerning the development of the disease, which may generate ideas for possible therapies. In this chapter, the Committee outlines the scientific situation with regard to the risk factors for dementia and the options for prevention.

4.1 (Potential) risk factors

Most studies of risk factors are related to AD. Vascular dementia is sometimes distinguished as a separate condition. Some studies simply investigate ‘dementia’, with no further specification. Wherever possible, in this report the distinction is made between, AD and unspecified dementia.

4.1.1 Age

The risk of dementia increases with age. Of all the links that have been investigated, the link with age is the strongest. Advanced age is the most important of the identified factors for AD and for most other forms of dementia (Bre98, Dui96, Gao98, Gor99, Hen98, Lau99, Rei99, Sch00d).

4.1.2 Gender

In a 1998 meta-analysis of studies into the development of dementia (not classified by type), no difference was found between men and women. In the case of AD, however, it was found that women had a higher incidence of the disease than did men (Gao98). Recent research confirms that AD occurs more frequently in women than in men, especially in the 80+ age group (And99, Bre99, Heb01, Lau99, Let99). It is unclear whether this is due to biological differences, a longer life span, differences in post-diagnosis survival time, behavioural differences or exposure to other factors (Eva99, Heb01, Swa99b). It has been shown that better-educated individuals have a reduced risk of dementia (4.1.8) but it is unlikely that the differences between men and women can be entirely explained in terms of differences in educational level (Let99). There was no support for previous contentions that men have a higher incidence of vascular dementia (And99, Lau99, Ler99). Premature death from cardiovascular disease among men could well contribute to the observed differences between men and women (Lau99, Ler99).

4.1.3 Genetic predisposition

Three genes have been identified that are involved in hereditary forms of AD. These are the amyloid precursor protein on chromosome 21 (APP), the preseniline-1 gene on chromosome 14 (PS1) and the preseniline-2 gene on chromosome 1 (PS2) (Geo00). The observation that individuals with Down’s syndrome have a higher than average incidence of dementia, contributed to the identification of the APP gene. This is because those suffering from Down’s syndrome have an extra copy of chromosome 21. From age

35 onwards, and sometimes during adolescence, they display neuropathological anomalies that are comparable to those found in AD (Dui96, Nob98, Rei99, Sek98, Vis97).

Mutations in the APP, PS1 and PS2 genes almost always result in the individual developing AD before reaching sixty years of age. These are therefore particularly important for early-onset dementia (Bro98, Dui96). Although carriers of these mutations have a high risk of developing dementia, their contribution to the incidence of AD in the entire population is less than one percent. As stated in the introduction, a detailed discussion of early-onset dementia would exceed the specification of this report.

A fourth gene is rather important for dementia in the elderly: the Apolipoprotein E gene on chromosome 19 (Geo00, Sau00). This is a *susceptibility gene*, which means that carriers are at greater risk of developing the disease although it is not certain that an individual carrier will actually go on to develop the disease.

There are several variants of the apoE gene, namely apoE2, apoE3 and apoE4. As a group, dementia patients include a larger percentage of apoE4 gene carriers than is found in the general population. This applies both to AD and to other forms of dementia in the elderly, including vascular dementia (Dui96, Hof97, Kal98, Mar98, Wei99). Dutch studies have shown that the risk of dementia in individuals with a single apoE4 allele is 1.7 times greater than that of the general population, while individuals with two alleles* are 6.2 times more likely to develop dementia. In Caucasians, about 16 percent of individuals carry at least one apoE4 allele; in AD patients, this is about 40-50 percent (Bro98, Dui96). Carrying an apoE4 gene accounts for an estimated 15 percent of all cases of AD. These percentages may vary slightly in other population groups (Dev99, Far00c, Gan00, Hen98, Tan96).

The mechanism by which the apoE4 gene exerts its effect is not completely understood. The fact that many carriers do not go on to develop dementia suggests that other factors are involved, which may or may not be genetic in nature. There is presumably a link between apoE variants and the age of onset of AD (Mey98, Sau00). Furthermore, the apoE4 gene might interfere with other (potential) risk factors for dementia, including age, gender, head injury, smoking, alcohol and atherosclerosis (Bad98, Duf00, Dui96, Hen98, Hof97, May98a, Ott98a, Sau00, Tan96).

4.1.4 *Other familial factors*

There is evidence that women with a Down’s syndrome child are more prone to AD, if they gave birth to that child before their 35th birthday (Sch94).

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* a gene has two alleles, one is obtained from each parent

It has been known for some time that AD patients often have one or more first-degree relatives with AD. Studies in which the methodology has been improved have recently shown that this factor has less weight than was initially thought (Dev00b, Heu01, Lau99, Sil00, Tun00). To clarify, Devi reported that the lifetime (up to age 90) risk of AD was 25.9 percent for those with AD in the family and 19.1 percent for others (Dev00b). Heun obtained values of 30 and 22 percent respectively (Heu01). The elevated risk can partially be explained by the presence of the gene mutations mentioned above (Ste00a).

4.1.5 *Cardiovascular risk factors*

As might be expected, the generally known risk factors for cardiovascular diseases also increase the risk of vascular dementia (Nye98, Sko99). Given the results of studies carried out in recent years, it is quite probable that these factors also heighten the risk of developing AD. This particularly applies to high blood pressure, atherosclerosis, diabetes, smoking and the apoE4 genotype, which has been known for some time to be a risk factor for cardiovascular diseases (Agü00, Bre98, Bre00, Gor99, Ior99, Sch00d, Sko99, Ste98).

The role of *high blood pressure* would seem to contradict the observation that, if anything, AD patients tend to have low blood pressures (Guo96). It is presumed that the rise in blood pressure appears long before (10 to 15 years) dementia manifests itself, and that the low blood pressure seen in AD patients is a consequence of their disease (Bir00a, Jon97a, Kiv01, Lau00b, Mor00c, Sko97).

Atherosclerosis is a demonstrable risk factor for vascular dementia. However, AD patients also show an increased prevalence of atherosclerosis (Hof97). Current guidelines for the diagnosis of AD explicitly exclude the presence of vascular factors. This hampers research into the role of atherosclerosis in AD (Hol99, Nye98, Ste98).

Diabetes is a known risk factor for cardiovascular diseases. Recent experimental and epidemiological studies have indicated that non-insulin dependent diabetes (diabetes 2) is also a risk factor for vascular dementia and for AD (Fro98, Hoy98a, Hoy98b, Ott96b, Ott99).

The initial suspicion that *smoking* had a protective effect was based on family studies and case-control studies. However, studies using more reliable methods have shown that smoking has no protective effect (Deb00, Dol00, Fra00b, Lei99, Tya00). There are strong indications that smoking even increases the risk of dementia (Gor99, Lau99, Mer99, Ott98a, Wan99). There are presumably interactions with apoE4 carrier status and other familial factors (Duf00, Ott98a).

Other associations with dementia and AD in this context include *atrial fibrillation* (Ott97a), elevated levels of certain *coagulation factors* in the blood (Bre00), excessive *fat consumption* (Bre00, Kal97) and disorders in the *cholesterol balance* (Eva00, Cha98, Hof97, Kiv01, Pri00).

4.1.6 Head injury

It is debatable whether a *head injury* sustained during life could be a factor in the development of dementia. A number of studies have produced contradictory results in this respect. Some find only a positive link to apoE4 carriers (Gra99a, Tan96), while others find that there is little (Pla00) or no linkage (Guo00). In the two above-mentioned studies, which are of the case-control type, a positive link was shown to exist between serious head injury and dementia or AD. This does not agree with the results of prospective studies, in which serious head injury was not found to be a risk factor for AD or dementia (Har99c, Meh99, Lau99).

4.1.7 Alcohol use

It has been claimed that chronic *excessive alcohol use* increases the risk of dementia, but the available literature offers few firm conclusions in this regard (Gor99, Kas96, Lar94, Smi95). The uncertainty is partly due to conceptual problems and difficulties of definition related to the matter of whether alcohol-related dementia should be seen as a distinct clinical picture (Smi95, Osl98). The possibility cannot be excluded that it is only heavy drinkers who are also apoE4 carriers who are at increased risk of dementia (Duf00). Moderate alcohol consumption is presumably not a risk factor. It may even have a protective effect (Gor99, Lei99, Org97).

4.1.8 Educational level

There is some controversy surrounding the significance of an individual's educational level as a factor in the development of dementia. Research in this area is characterised by a ragbag of positive and negative findings (Bre99, Dui96, Fio01, Hen98, Let99, Let00, Mun00, Ott97c, Räi98, Rei99, Ste99a, Tol99). The initial indications that there was a lower prevalence of dementia among individuals with a *high educational level* came at the end of the 1980s. Furthermore, those in this group who fell prey to the disease tended to develop it at a more advanced age, and they also died within a shorter period of time once the diagnosis had been made. Various hypotheses have been put forward to account for the relationship between educational level and the risk of dementia.

One possibility could be that more highly educated individuals might be better equipped to adjust to reduced brain function, either in biological or behavioural terms.

This has been ascribed to a greater ‘cognitive reserve’, which tends to delay the onset of dementia. That cognitive reserve could be the result of lifelong intellectual and social stimulation, or of well-timed stimulation of hereditary skills. In other words, it is the right combination of hereditary characteristics, upbringing and habits (Ste99). This conforms with the ‘use it or lose it’ notion put forward by Swaab, which states that using your brain reduces your risk of developing dementia (Swa98a).

Another view is that highly developed individuals do not develop dementia later than others do, but that current diagnostic methods are not sufficiently sensitive to detect dementia in this group. In other words, rather than a delay in the onset of dementia there is a delay in reaching the diagnosis of dementia. This would mean that the relationship is actually an artefact of the diagnostic method used (Bow98, Gee99).

Others take the view that it is not educational level that delays the onset of dementia, instead educational level and the age at which individuals develop dementia are both related to the early social environment (Del99c, Hal00, Hen98, Moc00, Moc01). Low levels of education and factors that promote atherosclerosis, such as smoking and eating fatty foods, are more common among individuals in lower socio-economic classes.

4.1.9 Medicines, hormones and vitamins

Studies of past medicine use among the elderly have given rise to the suggestion that those making long-term use of certain anti-inflammatory drugs (NSAIDs) have a lower incidence of AD (Ant00, Fly99c, McG96, Vel01a). In randomised studies of AD patients, it has not been possible to demonstrate a beneficial effect of anti-inflammatory drugs on the course of the disease (Ais00, Goo01b, Sch99a). However, this does not eliminate the possibility that long-term past use by healthy individuals does indeed have a preventive effect, since AD starts long before visible signs appear. The only way to establish the truth is to carry out long-term, large-scale studies on individuals who have not yet developed the disease.

Various studies have shown a lower incidence of dementia among women who made long-term use of *oestrogens* after the menopause than among those who did not. It was claimed that this group did not develop the disease until later in life (Dui99, Hog00, LeB01, Pal00, Slo99, Vel00, Yaf00a, Yaf00b). Some researchers were unable to demonstrate any such effect (Ses01). Prospective studies into the possible protective effect of oestrogens are currently under way. Randomised studies on oestrogen replacement therapy in individuals with slight to moderate AD were unable to find any effect on the course of the disease (Mul00b, Hen00). Again, this result does not say anything about the preventive value of long-term oestrogen use by healthy individuals (Sha00).

There are indications that the use of *histamine H2 inhibitory drugs* provides protection against dementia (Ant00).

It is increasingly likely that high blood pressure contributes to the development of dementia (4.1.5). Results from the sparse research into the relationship between dementia and the use of *antihypertensive drugs* indicate that these drugs do indeed have a protective effect against vascular dementia, or against vascular dementia in combination with AD (Vel01b). The only prospective intervention study into these drugs showed that the incidence of dementia decreased by half (For98).

It has been found that those using cholesterol-lowering drugs (*statins*) have a lower incidence of dementia (Jic00, Wol00d). This finding has yet to be confirmed by prospective studies.

Finally, there is some evidence that the long-term use of relatively high doses of *vitamins E and C* may reduce the risk of developing dementia (Beh99, Gru00a, Mas00, Mor98a).

4.1.10 *Other factors*

Many and varied are the factors that have been studied to date, while the results obtained have been inconsistent. The following summary is not claimed to be comprehensive, it is intended simply as an illustration.

Possible links to dementia are, for example, having *many brothers and sisters* (Moc00)*,* an *inactive lifestyle* (Fri01b, Kat95, Lau01, Yaf01), carrying the *Herpes simplex* virus (Itz98), exposure to *aluminium* (Ron00, Rog99, Yok00)*, lead* (Pri98), *zinc* and *copper* (Gon99a), as well as a variety of *social and psychological factors* (Ehr99, Fra00c, Kro99, Mei00, Ret00, Wet99a).

No convincing link was found for infection with *Chlamydia pneumoniae* (Bal98, Gie00, Noc99, Rin00), exposure to *organic solvents* (Gra98, Pal98), *amalgam (mercury)* (Sax99) and *electromagnetic fields* (Gra99b, Sav98).

4.2 Prevention

However desirable it may be to prevent dementia, the Committee is forced to conclude that the scientific situation offers few avenues for targeted prevention (Bla01). It may simply be that more time and effort are required to achieve usable results. It is also quite possible that these difficulties are an inherent aspect of the disease itself, in the sense that dementia is the result of so many combinations and complex interactions of factors that simple answers just don’t exist.

One point is very important, however. Namely the growing body of data, which indicates that cardiovascular diseases increase the risk of dementia. The Committee endorses the increasingly expressed view that the time is now ripe to give this fact a more prominent place in public information regarding what constitutes a healthy lifestyle. More so than in the past, it should be included in guidelines for the detection and treatment of high blood pressure, diabetes, atherosclerosis and elevated cholesterol levels in otherwise healthy adults (Bir00a, For98, Gijn00, Gor99, Guo99, Hac00, Kno01a, Pas98, Pat01, Rom99, Shi00, Sko97, Vel01b). According to the Committee, there is sufficient evidence that these external factors have a beneficial effect on health. Strictly speaking, however, there is still no proof that they are able to prevent dementia. In order to provide this, large-scale, prospective studies are required.

The evidence for a preventive effect of anti-inflammatory drugs and oestrogens is promising. Based on current knowledge, however, it would be premature to start using these medications, other than in the context of research.

Chapter **5**

Diagnosis

The Committee has selected three lines of approach for its discussion of the diagnosis of dementia. The first is diagnosis on the basis of an approach to the health service, either by the patient or his close friends or relatives. The second involves the active detection of dementia, in other words, diagnosis in which the initiative does not originate from the patient, or his close friends or relatives. The third approach relates to recent and future developments in the diagnosis of dementia, including DNA diagnosis.

5.1 Individuals approaching the health service

Symptoms related to memory and cognitive functioning justify a careful, diagnostic examination of the patient. A correct diagnosis is important for the prognosis and for adequate patient management. There is a broad consensus on this point within the medical literature (AAN01a, APA94, Dal99, Fis98, Ham99a, Pat01, Pet98, Ric99, Sco98, Sma97, Wal00).

In suspected dementia, two lines of approach are inevitable. One is the disease-oriented diagnosis, involving investigations of the nature of the symptoms and the cause of dementia. The other is the care-oriented diagnosis, which includes a list of the ways in which the dementia interferes with the day-to-day functioning of the individual concerned. Disease-oriented and care-oriented diagnosis can occur either simultaneously or in sequence.

5.1.1 *Disease-oriented diagnosis*

The disease-oriented diagnosis of dementia proceeds in phases. First the physician conducts a clinical examination to determine whether the patient is suffering from dementia (Annex C). If that is the case, he proceeds to the second phase – identifying the disease that is causing the dementia. Ideally, there will be a third phase after the patient's death: a pathological examination of the brain tissue to verify the diagnosis.

It is not always simple to establish that a patient is suffering from dementia. It is sometimes difficult to distinguish between dementia on the one hand and a delirium, depression or severe isolated cortical function disorder on the other. In addition, the older the patient, the more difficult it is to distinguish between dementia and normal ageing. A neuropsychological examination can help to clarify the matter. It is often the case that more than one examination is required in order to reach a diagnosis. When looking for the cause, it is important to identify treatable forms of dementia, such as depression, intoxication (and intoxication with medications) and vitamin deficiency. The majority of the more elderly patients suffer from irreversible forms of dementia, usually AD, vascular dementia or a combination of both.

The Committee endorses the importance of detecting treatable disorders that can aggravate any existing dementia, such as hearing or vision disorders, diabetes or other endocrine anomalies, high or low blood pressure, depression and other psychiatric diseases (7.1.2).

In an ideal situation, a *post mortem* neuropathological examination is the final stage in the disease-oriented diagnosis. An exclusively clinical diagnosis and an exclusively neurodisease-oriented diagnosis without clinical information are both probability diagnoses. In accordance with standing agreements, a definitive diagnosis is based on a combination of the clinical diagnosis and the neuropathological findings (Goo00a, Hol99, Hul98, Lim99, Nag99, New99, NIA97, Var99). There is excellent agreement between a diagnosis of AD that is based solely on a clinical examination and a definitive diagnosis (around 90 percent). There is far less agreement when it comes to a diagnosis of vascular dementia, however (Hym97, Jel98).

In practice, very few autopsies are carried out on deceased dementia patients. This is not only bad for research, it also affects the quality of medical treatment since no use is made of an excellent method for supplementing, correcting or confirming the clinical diagnosis (Gia99, Twe99). The Committee repeats its recommendation for an investigation into the obstacles involved to find opportunities for change (3.3.2).

5.1.2 *Care-oriented diagnosis*

It is essential that the patient and his carer receive adequate support in good time (Bec98). The starting point when drawing up an individual needs assessment for guidance, care and support is information about what the patient cannot and still can do without help. Furthermore, it is important from the very beginning to be aware of possible psychosocial problems, and of the ability of the carers to cope (2.3 and 7.1.2). It can sometimes be useful to refer a patient to a psychologist or neuropsychologist in order to get a good picture of all the relevant psychological aspects.

Numerous measurement scales are available for the evaluation of behavioural problems and of guidance and care requirements. There is in fact no such thing as a standard approach. Some have taken the initiative to further standardise the measurement instruments (Hin97, Jon01b).

5.1.3 *Guidelines*

In the Netherlands, there are two guidelines for the clinical diagnosis of dementia: the Guideline on dementia of the Dutch College of General Practitioners (NHG) and the Diagnosis Consensus for dementia syndrome by the Dutch Institute for Healthcare Improvement (CBO) (CBO97, NHG98).

In most cases it will be the GP who is first confronted with the complaints of the patient, or his family. The NHG standard is a guideline that enables GPs to determine whether the patient is suffering from dementia and how, in broad terms, to distinguish between the various possible causes. The NHG gives GPs a leading role in the diagnosis of dementia and in providing guidance for patients. In the case of complex diagnostic issues, the Committee recommends patients be referred to a multidisciplinary team.

The CBO consensus spans the entire diagnostic route, from GP to specialist. According to these guidelines, clinical diagnosis should preferably be carried out in accordance with a specific protocol and within specialised, interdisciplinary teams. The GP is assigned a central task in overseeing the diagnosis and in integrating all the results.

The strength of the CBO guideline is that all diagnostic options are explained in brief. One weak point is the considerable scope for individual interpretation, which would lead to medical practice variations. This is not so much a fault of the guideline as that of the field to which it relates. Numerous points lack sufficient scientific data for evidence-based decisions concerning the additional tests to run at a given situation. Moreover, the enormous variety of clinical pictures and of patient vulnerability demand weighing the pros and cons of additional diagnostic tests in an individual basis (GR88).

In that connection, the Committee notes that the important recommendation that specialist diagnosis be carried out in multidisciplinary teams does not necessarily imply that every member of a team should see every patient. This collaborative approach is more about the mutual exchange of knowledge and experience.

Both guidelines tend to place the emphasis on disease-oriented diagnosis. While pointing out the importance of care-oriented diagnosis, the NHG standard fails to indicate how GPs should go about this. The CBO consensus makes oblique mention of care-oriented diagnosis when referring to various measurement instruments that are mainly used for research purposes but seldom in daily clinical practice. When updating the guidelines, care-oriented and support-oriented diagnoses deserve due attention.

It is not possible to make a good diagnosis without taking the patient's cultural background into consideration (Pat01, RVZ00). Clinical history taking and neuropsychological examination have been drawn up along Dutch lines. Extra consideration is required in the diagnosis of individuals whose mother tongue and native culture are not Dutch.

5.1.4 *The GP's role*

Using the NHG guidelines, the diagnosis of dementia is a fairly straightforward matter. Nevertheless, there are indications that, in practice, some GPs do not perform as well as others in this respect (Win94, Hou99b, Hou00). Van Hout has identified several factors that tend to impede a good diagnosis. These include lack of familiarity with the diagnostic criteria and with cognitive testing, limited knowledge of the typical symptoms, lack of confidence in diagnostic ability, the notion that a diagnosis of dementia is not particularly fruitful and a degree of embarrassment about providing all the details. One major factor is presumably the number of patients suffering from dementia that GPs see. This number varies, and there are generally too few patients with this condition for the GP to acquire and maintain sufficient experience (Eef96). In view of this limitation, GPs can only perform an adequate diagnosis if during their training, or by some other means, they have had the opportunity to acquire additional experience with dementia, or if they happen to have a special interest in the condition. GP's attitudes to dementia may well change in future as a result of improvements in medical courses, coupled with an increase in the population of elderly people. This is not just important in terms of diagnosis, but also for the care and guidance of demented patients.

GP's generally enjoy a relationship with their patients that is based on mutual trust. The Committee feels that this provides them with a good starting point for discussions about the diagnosis and about guidance. In view of the difficult points that have already been mentioned, the Committee points out that this starting point more often leads to a role involving coordination and the pointing out of problems, than to an executive role.

GPs have good reasons for referring patients, including the complexity of the clinical condition and doubts about their own abilities.

5.1.5 Communication with the patient and his relatives

The starting point of good quality care involves the physician drawing up a policy in conjunction with the patient and his relatives, taking any specific circumstances into account. In the case of dementia, it is often not the patient himself who approaches the health service, but his partner, or a member of his family. In such a case it is essential to find out what the patient’s views are on the matter. Conducting an examination on individuals, without their permission, to determine whether they are demented undermines the doctor-patient relationship and contravenes the rights of the patients, as set out in the Medical Treatment Agreement Act.

It is very important that the patient and his relatives be adequately informed concerning both the diagnosis and the probable course of the disease (Pat01). The lack of a cure for dementia is no excuse for neglect. The importance of openness has mainly to do with giving those involved the opportunity to anticipate what is to come (Pos00). It allows them to express their feelings, to discuss personal and financial matters and, if necessary, to prepare a written advance directive before the patient loses the ability to do such things. In addition, understanding and insight concerning the situation provide a better starting point for assistance in psychosocial and practical matters, and can help to prevent crisis situations. It is in the interests of family members to answer their questions about heredity (5.3.3). In tertiary care also, the starting point should always be open communication.

Judging by reports in the international literature, openness with regard to the diagnosis is by no means self-evident (Ano98, Bar97, Cla98a, Joh00, Mar00c, Mey97, Ric94, Smi98, Vas99). The situation in the Netherlands is presumably much the same in this respect (Hou99b). Patients and their families are often terrified that the diagnosis will be dementia or AD, and physicians are often embarrassed about informing them that they have this condition. The Committee feels that physicians have the obligation to be completely open with those involved, while exercising the necessary tact. There have been cases of families that insist that the patient will not be informed of the diagnosis. Studies have shown, however, that family members often would want to be informed, if they themselves were suffering from this condition (Hus00, Kir98, Mag96, Pin00). Aside from normal distress, a clear statement of the facts can sometimes bring relief. In many cases, worry and confusion about personality changes that have been occurring over a period of time can be, to some extent, assuaged by the knowledge that a brain disease is responsible (Bac00, Hus00, Smi98).

5.1.6 *Cognitive symptoms, but no dementia*

It is not unusual for elderly people to experience memory problems and symptoms affecting their cognitive functions. These symptoms are often designated as MCI (mild cognitive impairment). While MCI can presage dementia, by no means all of those who exhibit these symptoms go on to become demented (Alm98, Alm99, Pet99a, Rit00, Tuo00). Studies have been carried out to determine if it is possible to predict whether individuals suffering from MCI will develop dementia. To date, these have not generated any practically useful results (Cel00, Dal00, Jag00, Kil00, Kno01b, Pet00, Rit01, Ros00b, Sch00a, Smi99, Tou99, Wol98a).

When dealing with patients who exhibit memory problems, it would be premature of physicians to take concrete steps to prepare such patients for impending dementia. It is important to emphasize those things that patients can still do well, without denying the possibility that the symptoms could be a forerunner of dementia (Jon00). It would be appropriate to conduct a care-oriented diagnosis if it appears that support in the psychosocial area is required. Given the increased risk of dementia, the possibility of repeating the diagnostic examination in due course must be discussed with the patient.

5.2 Individuals who have not approached the health service

Studies into the prevalence of dementia have shown that, in the Netherlands, many GPs are unaware that elderly individuals registered with them have gone on to develop dementia (Eef96, Kno00, Sma97, Ste00b, Val00, Win94). This is largely inherent in the fact that dementia begins insidiously and that patients often fail to recognize their disease (Dor98, Har00c, Kno98). Family members and other members of the household often see a failing memory as a normal, harmless sign of ageing (Cat00, Dor98, Hou99b, Kno98, Ric99, Sch00e). A timely diagnosis of dementia is important, since there is a chance (even if it is quite small) that the patient has a reversible form of dementia. More importantly still, it enables the patients and their families to take full advantage of information and guidance, which can provide support, especially in the early stages of the disease. Although the prevailing view is that people are responsible for their own health, it is important that there be an active policy to identify patients with dementia.

In theory, there are three options: population studies, case finding and being alert to symptoms. Population screening involves the systematic examination of all individuals in a given risk group or age group. In this case, it would involve all individuals above a given age. Case finding means that GPs and other physicians actively determine whether elderly patients who consult them (for whatever reason) show signs of dementia. This can be done by systematically introducing a simple memory test. Sadly, no suitable instruments are available for carrying out population screening or case finding. Current methods are insufficiently reliable. They would harm many patients who are not destined to develop dementia, by unjustifiably confronting them with a doom scenario (Dor98, Pat01, Pet01). This leaves only the third option, being alert to the symptoms of dementia.

GPs bear the initial responsibility of being alert. This means that every GP should be capable of recognising the early symptoms of dementia. It is here that instruments could be of use (see Hop01a, Hop01b, for example). GPs must be prepared to raise this subject, taking all necessary care. They must be alert to signals for help and emphasise the need for a diagnosis, or referral to that end (Bro98, Pat01, Pet01). However, if the individuals concerned are not interested or, consciously or unconsciously, just don't want to know, then the GP must respect that (Hov01).

5.3 Developments

5.3.1 Clinical diagnosis

The clinical diagnosis of dementia and its causes is generally a complex and time-consuming undertaking. While AD can be diagnosed with a reliability of approximately 90 percent (Lop00a), it remains to be seen whether this percentage is also achieved outside the specialised centres (Gro99). For some time now, people have been searching for ways of reducing the diagnosis of AD to a few (or just one) practical and reliable tests. In this connection, various studies are being carried out in the field of neuropsychology (Bal99b, Bus99, For99, Loo99, Pas99), imaging techniques such as CT, MRI and SPECT (Ada98, Pan98, Rei99, Sch00a,) and biological markers in the blood, urine or spinal fluid (Ban98, Ble98, Gal98, Nis98, Tap00, Wel01). While there are unmistakable signs of progress, these methods cannot yet compete with the greater reliability of clinical diagnosis (Kno01b, Mor00b, Mul00a). Some authors have expressed the view that combinations of tests and determinations will replace clinical diagnosis in the near future. The Committee considers this to be more wishful thinking than an evidence-based analysis (Bla99, Ble98, Gal99, Gro99, Kah00, Zak98).

Virtually all research has focused on developing test methods to provide a clear 'Yes' or 'No' answer to the question of whether a patient is suffering from AD. The current lack of success is presumably related to the heterogeneity of the condition to be diagnosed (3.2.4). Seen in this way, a more productive approach would seem to be the targeting of methods for determining the relative contributions of the various anomalies, such as plaques, tangles, Lewy bodies and vascular anomalies (Goo01a, Lop00b, Pet98).

Another area of study is improvement of the clinical diagnosis of underlying causes, using research in the fields of neuropsychology, clinical neuropsychiatry and behavioural neurology. The aim is to better distinguish clinical pictures that, while clinically resembling AD, have quite different therapeutic or prognostic implications. Some examples are delirium (including chronic delirium), hippocampal sclerosis, primary progressive aphasia, asymmetric cortical degeneration, semantic dementia, Lewy Body dementia, or corticobasal degeneration (examples in Dal01, Gri99, Ker00, Lin00, Nak00, Ros99).

Furthermore, there is some evidence that the same disease can have a variety of clinical manifestations, each of which presumably has a distinct course and possibly different reactions to drugs (Cum98, Jon01c, Pet98). With regard to anti-dementia drugs (chapter 6), it may be important to distinguish between Alzheimer's disease with and without psychosis, and with and without delirium. Studies are going on into ways of improving the identification of such clinical manifestations by systematic inclusion and consistent registration of non-cognitive symptoms in the diagnostic procedure.

5.3.2 *Early diagnosis*

The current clinical criteria for dementia suggest that dementia cannot be identified with any certainty until the underlying disease is far advanced (5.1.6). The aim is to develop methods of detecting the diseases that can cause dementia at a much earlier stage, before the individual meets the current clinical criteria for dementia. The emphasis is on combining clinical examination with the measurement of biological markers, the previously mentioned specific neuropsychological tests and imaging techniques (Alm99, And99, And01, Bla99, Dal00, Fox99, Jag00, Kil00, Mor01, Sch00a, Smi99, Vis99, Vis01b).

The advantages of an early diagnosis might be that treatable forms of dementia will be discovered at an earlier stage, that assistance and guidance can start sooner and have more effect, and that it will give people more time to prepare themselves for what is to come. Some of the possible adverse effects are stigmatisation and the fact that the patient discovers that he has a serious disease for which there is no therapy. While early diagnosis is not yet a reality, it is important to consider its usefulness and desirability. The Bio-ethics and Health Law Centre has recently given the debate on this topic a good start (Hov01).

5.3.3 *DNA diagnosis*

Carriers of the E4 variant of the apolipoprotein gene (apoE4) are at greater risk of developing AD, and possibly also vascular dementia, than are non-carriers (see 4.1.3). This data, which became available in the mid-1990s, generated extensive discussions concerning the usefulness and need for testing to determine whether individuals are carrying the apoE4 gene. The conclusion was that there is no place for routine apoE genotyping in the diagnosis of dementia. The reason for this is that while the presence of the apoE4 gene increases the risk of AD, it does not automatically mean that a given individual carrier actually has the disease. Non-carriers can also develop AD. Furthermore, it is possible for demented apoE4 carriers to suffer from treatable forms of dementia (AAW96, ACM95, AGS01, CBO97, Goo96, May98b, McC98, NCB98, Pos97, Slo96, Wal00).

For the same reason, apoE genotyping is unsuitable for use as a predictive test for the early detection of dementia (or the risk of developing it). A negative test result does not mean that the individual in question will never develop AD, and a positive result does not necessarily mean that he will actually go on to develop the disease (AAW96, AGS01, Bro95, Lid01, McC98, Pos97, Wal00).

The DNA diagnosis of mutations in the APP, PS1 and PS2 genes is of scant relevance to dementia in the elderly, since such hereditary forms of AD virtually always manifest themselves before the age of 60. In the interest of completeness, the Committee will append a few remarks at this point. A carrier of one of the mutated genes mentioned almost certainly already has AD, or will go on to develop the disease. As a result, a positive DNA test has a high predictive value. A negative test result has a low predictive value, however. An individual can always have or develop a sporadic form of AD, or a familial form, without being a carrier of any of the known gene mutations (Tun99). This is why, in practice, physicians are cautious about using DNA diagnosis. In families with a clear autosomal dominant pattern of inheritance for premature dementia, it would be appropriate to discuss the option of DNA diagnosis. This would then allow the option to be accepted or rejected on the basis of reasoned arguments. This gives rise to problems that are comparable to those seen in Huntington’s disease, a neurodegenerative disease with autosomal dominant inheritance. One essential precondition for the use of DNA diagnosis in such cases is expert counselling in reaching a decision about whether or not to test, and about how to proceed after such a test has been carried out (Bro95, GR98a, Lid01, Rob00, Sad01, Tib97, Wal00).

Research into the genetic backgrounds of dementia is making rapid progress. New information and other tests will certainly become available. The Committee does not expect that high-predictive-value DNA tests will soon be available for routine use in the diagnosis of the dementia syndrome. This would only be possible if a dementia-causing autosomal dominant gene were to be discovered. This is a very unlikely possibility, given the lack of a clear familiar inheritance pattern in the majority of cases.

Another prospective option is the use of DNA diagnosis to predict whether individual patients will or will not respond well to a given type of therapy in order to attune the course of treatment to individual patients (Mai01, GR00, Pic01, Wol00a). The first few steps on the path to the so-called pharmacogenetics have now been taken (Cac00). As yet, there are no applications in everyday use.

Finally, the Committee points out that the general public is inclined to over-estimate the capabilities and value of DNA tests with regard to AD and other forms of dementia. This aspect merits more emphasis in the general information about dementia, in particular when informing family members (Lid01).

Chapter

6

Interventions: anti-dementia drugs

Since the 1980s, people have been attempting to develop drugs capable of counteracting, or at least halting, the cognitive and functional deterioration seen in dementia, especially AD. The first and, to date, only genuine ‘anti-dementia drugs’ belong to the class of compounds known as acetylcholinesterase inhibitors. One such substance with public health insurance coverage in the Netherlands is Rivastigmine (Exelon®).

6.1 Acetylcholinesterase inhibitors

6.1.1 The cholinergic hypothesis

Systematic biochemical studies of the brain in the 1970s, revealed that patients suffering from AD had reduced levels of the enzymes that are involved in the synthesis and breakdown of the neurotransmitter acetylcholine. At the same time, other studies were revealing that this substance was involved in memory and learning. The combination of these data led to the formulation of the cholinergic hypothesis postulating that stimulation of the brain’s cholinergic system could lead to functional recovery in patients with AD (Ber99, Dav99a, Fra99, Goo00b, Sch98). During the 1980s, this hypothesis was a central feature of research into drugs to treat AD. The acetylcholinesterase inhibitors that we have today, almost twenty years later are the result of this work. These substances are used to increase the concentration of acetylcholine by temporarily or permanently inhibiting its breakdown. They are generally referred to as cholinesterase inhibitors.

Today, however, the cholinergic hypothesis is significantly less important than it once was. Damage to the cholinergic system is not specific to AD. It also occurs with other neurodegenerative diseases, and in patients with AD, anomalies are not confined to the cholinergic system (Lan01, Min99). The notion that the extensive destruction of neuronal networks seen in AD could be compensated for by manipulating a single neurotransmitter system does not fit well with current concepts in the neurosciences (Dri00, Fra99, Goo00b, Gre96, Gre98). However, the conclusion that these substances were developed on the basis of an outmoded concept need not necessarily imply that they are entirely ineffective.

Four cholinesterase inhibitors are currently used to treat patients with slight to moderate AD.

- Tacrine (Cognex®): in the US and ten European countries, but not in the Netherlands.
- Donepezil (Aricept®): in 35 countries, including the US, Canada and 13 EU member states, but not in the Netherlands.
- Rivastigmine (Exelon®): admitted via a central EU procedure in all EU member states (1998). This is the first and, to date, only cholinesterase inhibitor for use in AD that is available on the Dutch market. In January 1999, under certain conditions, it was included in the public health insurance coverage.
- Galantamine (Reminyl®): in some European countries and the US, but not in our country.

6.1.2 *Clinical trials*

The results of randomised controlled trials (RCTs) using cholinesterase inhibitors are extensively described, summarised and reviewed in the literature (see, for example, Bir00c, Bir00d, Doo00, Gle97, Goo00b, Gru00b, Kra99, May99, McL99, Qiz00, Sco00, Spe98, Sto00, Wol00b). It is no simple matter to compare studies of the use of these drugs in patients. The reasons for this include differences in experimental design, the units in which outcomes are expressed, dosage, duration of the study and presentation of the results. Relatively few of these are appropriate for inclusion in a meta-analysis (Arr98, Bur99, Wol00b). Despite these limitations, the general conclusion is that cholinesterase inhibitors produce consistent, statistically significant but only very slight benefits relative to placebos.

6.1.3 *Interpretation and methodology of the trials*

In order to be eligible for registration, drugs for AD must exert a beneficial effect on the core problems of dementia: cognitive deterioration and loss of functional skills (CPMP97, McL99, Win00). For registration purposes, this has been made operational as an objective evaluation of cognition and functioning, and a broad clinical evaluation. In order to include rivastigmine as an example[a]*: in the trials on which the 1998 EU registration was based, the scores on certain scales (MMSE, ADAS-cog, CIBIC and PDS) served as a yardstick for results (Cor98, CPMP97, Rös99). The average scores in these scales were consistently and significantly better in patients who had been given rivastigmine. However, the average observed effect amounted to only three to five percent of the total range of these scales. These differences are so slight that their clinical relevance must be doubted. With regard to one of the scales used, it is known that changes only have clinical significance for individual patients if they have a value of at least ten percent (Bur99, Cla99, Sim99). One striking fact is that the difference between the placebo groups in the various studies is sometimes greater than the ‘therapeutic’ effect (Pry99).

Since the average scores of groups of hundreds of patients is not very informative for the attending physician, the Committee for Proprietary Medical Products (CPMP) carried out a further analysis to determine the level of treatment success in individual patients. That analysis showed that six percent of those patients who were treated with a placebo exhibited a successful response, as did ten percent of the patients who used rivastigmine. This is an extremely modest result.

Adverse effects are also a cause for concern. Patients given rivastigmine suffered considerably more nausea (38 percent versus 10 percent), vomiting (23 percent versus 5 percent) and dizziness (24 percent versus 13 percent). The gastrointestinal problems resulted in weight loss, more often in women than in men. Other adverse effects included abdominal pain, agitation, diarrhoea, headache and insomnia. The drop-out rate was approximately 25 percent, half of which was due to the adverse effects. Adverse effects and drop-out were much more common in patients receiving a high dose (6-12 mg/day) than in the low-dose group (1-4 mg/day). The high frequency of adverse effects, and their nature, makes one wonder whether it was possible to maintain blinding right through to the end of the trials. This is all the more so since, in some rivastigmine trials, the researchers were instructed “to escalate the dose until dose-limiting side-

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* The Committee selected rivastigmine as an example because it is the only drug admitted for use in the Netherlands. Its remarks apply, with the necessary changes, to the entire range of patient-based studies into cholinesterase inhibitors.

effects were observed" (Cor98). Furthermore, the high drop-out percentage poses a problem in terms of the analysis of the results (Goo00b).

One fundamental question concerns the best way to measure the targeted improvements. Since no single instrument meets all of the conditions for use in drug trials, a range of instruments have been used, each of which supplements the others. There is a large range of psychometric instruments, each of which measures a slightly different facet of cognition, functioning and behaviour (Con98, CPMP97, Gau98a, Iss00, Poi97, Sim99, Sal98, Win00, Wol00c). Variation in the instruments used hampers a comparison of the results from the various studies. Well-validated instruments and international standardisation within this field are urgently needed.

Some researchers suggest that still other yardsticks for results should be included in the evaluation of the trial results. One suggestion in this connection, from the field of pharmaco-economic research, is the time until the patient is admitted into a nursing home (Gau98b, Iss00, Win00). Even if it were feasible to use this criterion (the trials would, in any event, have to go on for much longer), there are a number of weighty arguments against it. There are complex moral issues associated with the use of postponement of institutionalisation as a treatment objective (9.4). In addition, the use of such a parameter would greatly hamper comparability between different countries (which is essential to the multicentre nature of most of the trials), because both the practical options and the cultural backgrounds and customs relating to hospital admission vary from country to country. Past research involving models and trial data has shown that the use of cholinesterase inhibitors can be expected to have a negligible effect on the delay of institutionalisation (Shu00, McD01).

In relation to the adverse effects of the therapy, an important issue is how patients weigh up the small improvements in cognition or functioning by rivastigmine use against nausea, vomiting and diarrhoea. This is an important argument in favour of including a consideration of the quality of life (QOL) in drug trials. However, there is no adequate QOL measurement instrument for dementia in terms of validity, reliability, sensitivity and practicability. Intensive efforts are being made to develop such instruments, but there is no consensus about the concept in the case of dementia (Bro99b, Rab99, Sal98, Wal98). Central to the discussion is the paradoxical fact that the patient is the only person to judge his quality of life, but that he has little or no ability to do so.

6.1.4 Open questions

The placebo-controlled trials lasted for six months. That is a short period for a disease that lasts five to ten years from the moment of diagnosis. In some trials, once they had been completed, patient treatment was continued and the course of the disease followed for a period of one to (in rare cases) five years. Since this is just a selection of patients, and an adequate control group is lacking, this data cannot be used to derive any conclusions about efficacy (Far00b, Rog98, Rog00b).

It is not known whether temporary treatment with cholinesterase inhibitors is capable of affecting the duration and the nature of the disease course over time. This would require long-term, comparative, follow-up studies with large groups of patients receiving either a cholinesterase inhibitor or a placebo. If were to be shown that this treatment eventually prolongs the total duration of the disease, then this would give rise to new moral questions.

When individual responses to the treatment are examined, a few patients show signs of considerable improvement. However, it is impossible to predict which patients these will be. Research aimed at identifying the factors that affect the treatment process is now a priority, especially given the high frequency of the adverse effects, and their unpleasant nature. There are no known studies in which the efficacies of the various cholinesterase inhibitors are directly compared to one another. What is certain is that the adverse-effect profile of tacrine compares unfavourably to that of all other drugs of this type (Kra99, Nor98). Galantamine and donepezil are thought to have fewer adverse effects than rivastigmine, which has been admitted to the public health insurance coverage in the Netherlands (Ras00, Sco00, Tar00).

It is debatable whether the - temporarily - beneficial effect of anti-dementia drugs on their cognitive abilities should be seen as a blessing for patients suffering from dementia. The possibility cannot be excluded that patients who no longer have any true appreciation of their situation have this understanding restored by the treatment. This would force them to re-live the phase of confusion, anxiety, despair and resistance. That would result in a longer period with a lower quality of life (Ber00a, Bia99, Pos98). On the other hand, an extension of the period in which the patient is still able to communicate reasonably well would allow him the opportunity to express his feelings and, together with his nearest and dearest, to anticipate the future.

A treatment that no longer has any effect also gives rise to problems. For example, two patients have been described who committed suicide when they realised that the drug was not improving their condition (Fer99). Even where a cholinesterase inhibitor does have some effect, there inevitably comes a time when this ceases to be the case. When the decision is taken to suspend treatment, the individual concerned and those closest to him may well feel that the last ray of hope has been extinguished (Ber00a, Pos00).

Little is known about the motives of the individuals concerned (patients, their close friends and relatives, and the attending physician) to opt for treatment with a cholinesterase inhibitor. Just as poorly understood is the way in which they arrive at this decision. While AD certainly damages the patient's cognitive abilities, a diagnosis of '(possibly) AD' does not automatically imply that the individual concerned is entirely unable to give informed consent. The patient's close friends and relatives undoubtedly have a major influence in the decision-making process relating to the use of an anti-dementia drug. However, it is vital to involve the patient as much as possible in this process. In chapter 8, the Committee conducts a closer examination of the relevant aspects of the ability to give informed consent, as well as substitute decision-making in treatment and medical research.

The remarks stress the importance of carefulness procedures for informing and communicating with those involved, for making decisions and the importance of adopting an extremely individual-based approach when using cholinesterase inhibitors. Furthermore, research (preferably with a qualitative orientation) is required into the ethical aspects of the use of anti-dementia drugs (Ber00a, Hug00a, Pos98, Pos00).

6.1.5 *Practice*

While the results of RCTs are considered as the best evidence for a drug's efficacy, they are usually of little use as direct guidelines in the practical situation. This is certainly true in the case of rivastigmine. Given the doubts about the validity of the research results and the uncertainties surrounding the clinical relevance of the effect, restraint is recommended. The former minister has therefore - quite rightly – imposed strict conditions on such use. These are contained in a protocol that was drawn up by the Care Insurance Board (CvZ) in consultation with the professional groups involved (CvZ00). The principal elements are:

- cautious diagnosis and individual needs assessment, like those used in the trials
- explicit discussion of the pros and cons, adverse effects and chances of success
- evaluation after three months, six months and then at six-month intervals
- assessment of day-to-day functioning, cognition, behaviour and broad functioning
- clear criteria for stopping, such as severe or unpleasant adverse effects, marked progression of the disease, no patient compliance and a poor general condition
- treatment in a multidisciplinary environment, by physicians specialising in dementia.

In the protocol, the emphasis is on the effectiveness of rivastigmine in individual patients. This is a precondition to reimbursement of the costs of this drug. Aside from mentioning the domains to be considered, the protocol does not specify which measurement instruments should be used to determine effectiveness. In addition, the CvZ is considering establishing a national registration system for examination questions that have yet to be formulated.

The Committee emphasises the importance of using objective, standardised methods for determining effectiveness in individual patients. A relatively easy-to-use method has recently been developed in the Netherlands. This involves comparing the results of measurements on three scales with the results of the ‘natural course’ in a cohort for which extensive details are available concerning their scores on the same three scales (Ric01a). An initial study into the effectiveness of rivastigmine in the practical situation was carried out, in which 53 patients took part. Using this method, it was found that in three patients the course of the disease over the first six months was better than in the reference cohort. Twenty-nine patients (55 percent) withdrew prematurely from the therapy, mostly due to gastro-intestinal problems (Ric01b).

Standardisation is not only in the interests of the patients; it is also an absolute precondition for studies (to be established via a national register) into the clinical relevance of rivastigmine and possible future anti-dementia drugs. According to the Committee, high priority should be assigned to achieving consensus about the way in which measurements should take place. Without any consensus on this issue, there is little point in setting up a national register.

An essential part of a genuine individualisation of treatment is a goals contract that the patient and his carer draw up at the start of treatment, concerning those domains in which improvements should take place. Agreements of this kind can make an important contribution to reaching decisions about whether to suspend the treatment (Ric01a, Ric01b, Swa99a).

Finally, the Committee emphasises the need to embed this treatment in the guidance and support provided in the context of psychosocial matters (chapter 7).

6.1.6 *Significance of acetylcholinesterase inhibitors for patients with AD*

The Committee notes that the first anti-dementia drugs for patients with AD, the acetylcholinesterase inhibitors, produced extremely marginal results. Only in a very limited number of patients did these drugs have any effect at all. However, it is impossible to predict which patients will benefit from this treatment. This situation is not made any better by the fact that these drugs carry a high risk of adverse effects. All patients are exposed to such a risk, whether or not they gain any real benefits from the treatment. When considering the big picture, it is highly debatable whether the cholinesterase inhibitors make a net positive contribution to the quality of life of patients suffering from AD. There are a number of unanswered questions. In scientific terms, the very fact that it is theoretically possible to influence the symptoms of AD represents genuine progress. Therefore, the cholinesterase inhibitors indisputably represent a first step in the development of drugs for the treatment of AD. However, these drugs by no means represent a breakthrough for individual patients (Gia00, Pry01).

6.2 Effectiveness criteria for anti-dementia drugs

The minister's request was to "determine whether it is possible to formulate general starting points and criteria on the basis of which a drug for the treatment of Alzheimer's disease could be considered to be *effective*". RCTs provide a picture of the efficacy of a drug under optimum conditions, i.e. homogenous groups of patients, experienced researchers, and excellent facilities. Effectiveness is the extent to which the medication has the intended effect in everyday practice, where conditions are generally less favourable, apart from considerations of financial cost. Effectiveness is therefore a relative measure, rather than an absolute one. In order to determine effectiveness, it is first important to identify the effect that is being sought. In other words, what is the objective of the treatment with anti-dementia drugs? In addition, a method should also be available for objectively determining whether the intended goal has been achieved in individual patients.

The ideal anti-dementia drug is one that actually cures patients of their dementia. No such drug exists, nor is one likely to become available in the foreseeable future. For the time being, people will have to be satisfied with less far-reaching objectives. These include improvements to a patient's memory, or at least limiting memory loss and cognitive deterioration, together with the stabilisation or restoration of general functioning. There is little or no disagreement on this point (CPMP97, McL99, Pry99, Sra00). The Committee feels that these criteria, which are admittedly quite broad, should be used as a guide in any evaluation of effectiveness. This means that measurements must, at any rate, relate to those domains in which improvements are sought, namely cognition and general functioning. There is complete agreement on this point also. However, the question is (as explained above) how should this be made operational and standardised. This is necessary in order to make a judgement about the results in large groups of patients. In this respect, the Committee would again like to emphasize the importance of achieving consensus concerning the methods and instruments to be used, not only for the evaluation of rivastigmine, but also to determine the value of future anti-dementia drugs for patients suffering from dementia.

The effectiveness of a drug is partly dependent on the nature and extent of its adverse effects. Measures that provide some insight are the number of patients that must be treated in order to achieve a therapeutic effect in just one of them (NNT) and the number of patients who consequently experience unpleasant adverse effects (NNH). An ideal medication would have an NNT of 1 and an NNH of 0. However, there is no objective scientific method for identifying criteria that could be used to determine whether a given degree of effectiveness is socially acceptable. Any attempt to answer the question of whether a given drug can be considered to be effective in this sense must ultimately be based on socio-political options, using scientific findings as a guideline, of course. The Committee feels that the rivastigmine trials have shown the drug to be only very marginally effective (an NNT of 25 and an NNH of 3 (Goo00b)). Despite the drug's unfavourable profile, patients using it are now able to obtain reimbursement for the costs involved. This is an additional reason for only prescribing it according to a strict protocol (CvZ00).

6.3 Other approaches

6.3.1 Existing medications

In recent years, many existing medications have been tested to determine whether they are capable of halting the cognitive and functional deterioration of patients who have been diagnosed with either AD or vascular dementia. These studies used a variety of methods to measure effectiveness. The following list is purely for purposes of illustration, it is not claimed to be complete.

- Antihypertensives, including clonidine, diltiazem, nicardipine, nimodipine. There is no compelling evidence to suggest that these drugs have any beneficial effects on the process of dementia (Fli00, Fly99b, Höl98, Lop00c, Oli00).
- Precursors of acetylcholine, including lecithin. The results do not suggest that this is a productive strategy (Hig00, Ott98b, Sra00, Sun98)
- Ergoloid mesylates. A mixture of these substances marketed under the brand name of Hydergin® has been available for almost 50 years; it has been tested in more than 100 studies, including several RCTs. Doubts remain concerning its effectiveness. A slight beneficial effect was seen in just one study, involving patients with vascular dementia (APA97).
- Anti-oxidants, including
  - *idebenone*, which had little or no effect (Adk98, May99, Sra00)
  - *ginkgo biloba*, for which inconsistent results were obtained (Bea00, Don00, Oke98, Wet99b)
  - vitamin E (alpha-tocopherol), which was found to have some effect in a single RCT. This study awaits confirmation by other studies, particularly because of its methodological weaknesses and the risks associated with the high doses used (APA97, Dra97, Pat01, San97, Sra00, Tab00, Vat99)
  - high doses of vitamin B1 (thiamin), for which no indications of any effect were found (Rod00).
- Anti-inflammatory drugs, including

  - *indomethacin*, which seemed to have some slight effect in a single, small-scale study; however, the common occurrence of adverse effects suggests that the medication is not particularly useful (Gru98, Sra00)
  - *diclofenac*, for which no effect could be found in a small-scale study (Sch99a)
  - *celecoxib*, which (according to a preliminary report of) a large scale, well designed study showed to be equally ineffective (Sai00)
  - *hydroxychloroquine*, which has no effect on the course of the disease in AD patients in the initial phase of the disease (Goo01b)
  - *prednisone*, for which the same applies (Ais00)
  - *aspirin*, which is used to prevent new infarcts in the case of vascular dementia, although it has no effect on the course of the disease (Wil00a).
- Oestrogens, which, in RCTs applying the usual dose, produced no effect on the course of the disease in patients with (probable) AD (Ast99, Mul00b), but which may have a beneficial effect on cognitive abilities at high doses (Ast01)
- Selegiline, a mono-amine-oxidase inhibitor which may have some slight beneficial effect, but whose use may be hampered by interactions with other medications and certain foodstuffs (Bir00b, Sra00, San97).

The Committee takes the view that the currently available data on their effectiveness does not justify the routine use of any of these medications as anti-dementia drugs.

6.3.2 New developments

Various studies are either planned or underway into the possibility of expanding the indication for cholinesterase inhibitors. It is hoped that a large-scale, three year, multinational RCT will provide answers to the question of whether it is possible to postpone AD in patients with limited cognitive deterioration who have not yet developed dementia, i.e. patients who are at risk (Ben99). Since a substantial number of individuals in this population will never become demented (5.1.6), this will give rise to new questions (Ber00a). A comparable study involving vitamin E is also planned (Gru00a).

One of the options is an expansion of the indication for cholinesterase inhibitors to include patients in the later phases of AD (Dav99c, Fel01b, Gia98). Another is an expansion to include the group of patients with severe behavioural disturbances, who had previously been excluded from participation in the trials (Cum00a, Cum00b, Kau98, Sun00, Wei00b). Studies are also under way to investigate the effectiveness of these drugs in patients suffering from vascular dementia (Mae01) and from Lewy body dementia (Fer00, Lan00, Que00, Sam00).

Still other pharmacotherapeutic strategies are being tested. Several hundred substances are currently under investigation, many of which have yet to progress beyond the test-tube stage. The various therapeutic approaches include:

- enhancement of cholinergic transmission in the brain other than by means of cholinesterase inhibitors (acetylcholine agonists, muscarine and nicotine receptor agonists, stimulation of acetylcholine secretion)
- modification of glutamatergic transmission in the brain
- protection and reactivation of nerve cells by growth factors
- modification of protein synthesis in the brain by sex hormones
- suppression of inflammation
- reduction of oxidative damage to brain cells
- inhibition of brain cell death processes
- influencing beta-amyloid metabolism
  (see Bro99a, Cut010, Fly99a, Gia98, Gra00b, Gre98, Gru98, Har00a, Höl98, Mat00, May99, Roi99, Sel01, Sir99, Sra99, Sra00, Sun98, Win99).

These new strategies have yet to produce concrete results. Some people consider attempts to influence beta-amyloid metabolism as a particularly promising strategy. Experiments in mice have shown that the plaques can be removed by means of vaccination (Bar00, Sch99b, Wei00a), resulting in improvements in behaviour and in the prevention of memory loss (Ing01, Jan00, Mor00a). The vaccine was first administered to humans in mid-2001, in experiments aimed at establishing the safety of this approach. This study has meanwhile been cancelled, due to the occurrence of severe adverse effects*.

It is extremely difficult to administer substances to the brain. Many substances simply cannot pass from the blood into the brain (blood-brain barrier). For this reason, people are attempting to develop other methods of administration such as the implantation of (genetically modified) cells that are able to secrete certain substances. Another impediment is that neurotransmission can only be influenced in a relatively non-specific way, which increases the risk of severe adverse effects.

The Committee considers it unlikely that, in the near future, a drug will be found which will be capable of combating all of the symptoms of the disease. A more realistic scenario is the development of combinations of therapies with cumulative effects. Such therapies might include the acetylcholinesterase inhibitors.

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* see www.elan.com/NewsRoom 01/18/2002

6.4 Scientific research into anti-dementia drugs

A report by the Social and Economic Council (SER) in the Netherlands, entitled *Health care in the Netherlands for an ageing population*, contains the phrase "…that healthcare costs for the elderly could be drastically reduced if medical science were able to substantially reduce the incidence of psychological disorders, such as dementia" (SER99). This is the dearest wish of the patients concerned and of their close friends and relatives. They are confronted with a disease for which there is no cure. The same is true of their attending physicians. They too would like nothing more than to be able to prescribe a medicine that could cure the disease, or at least halt the dementing process. Researchers are making intensive efforts to achieve this. As yet, however, little real progress has been made (6.1).

6.4.1 Therapeutic illusion

Dementia sufferers and their carers hope so fervently for something that can cure dementia that they will seize any opportunity to believe that such a remedy lies within reach. This unfounded optimism is aptly characterised by the term 'therapeutic illusion' (Ber00a, see also 8.2.1). The Committee believes that, in the case of dementia, the influence of therapeutic illusion and related mechanisms reaches further than patients and their carers. There is a general awareness of people's profound desire and hope for a therapy. This influences all areas of therapeutic research and associated matters, such as reporting in the media, decision-making with regard to coverage of anti-dementia drugs by public health insurance, the pharmaceutical industry's marketing strategies and the participation of physicians in studies sponsored by this industry. Nor can the possibility be excluded that therapeutic illusion is partly what motivates physicians to prescribe anti-dementia drugs. In doing so, they can show that they are doing everything possible.

6.4.2 Science and industry

The development of drugs for diseases that commonly occur in wealthy countries is a commercially attractive proposition. Since old age involves infirmity, pharmaceutical companies are very interested in the commercial possibilities of the western world's ageing populations. The fact that the industry is becoming increasingly interested in this area is something of a plus point. However, there is also a downside to all of this.

The pharmaceutical industry's interests in the development of new medicines are fully compatible with those of the patients, if the result is an effective medication. However, if the results are disappointing, then the patient's interests and those of industry tend to differ. The industry, which has invested large sums of money in the drug's development, will make every effort to register and market the drug. Experience with cholinesterase inhibitors, for example, confirms that industry will act in this way, even if the drug in question is only marginally effective and has extremely unpleasant adverse effects (Goo01a). A major consideration here is that this approach is based on an obsolete concept (6.1.1). From an objective scientific viewpoint, it makes more sense to devote one's energies to the exploration of other concepts. This questions the ability of 'science' to actively control the development of anti-dementia drugs.

Industry uses clinical investigators, who may or may not be employed by a university, to carry out the requisite trials. While they can be most productive, such relationships also have a hazardous side (Cat99, Ver99). Since the state is becoming less involved in the financing of scientific research, drug research primarily consists of contract research carried out at the behest of industry. The consequence is that the topic and direction of research are largely determined by industry. Furthermore, the freedom to publish results can be constrained in terms of timing, authorship and content. This can tend to bias, as many authors have pointed out (see, for example, Ang00, Ano01, Bod00, Dju00, Mel98, Nat99, Pro01, Van99, Wea00).

Another risk is that, following the relatively successful completion of the trial, the industry will hire the investigator to capture the market for the drug in question. One way is to ask him to present the findings at conferences and symposia. Under these circumstances, many investigators will find it difficult to maintain an independent, honest position; this is all the more difficult because, aside from financial rewards, there is always the prospect of a growing reputation (Cat99, Goo01a).

The aforementioned mechanism of therapeutic illusion renders the process of developing drugs for previously untreatable disorders susceptible to the negative aspects of the intimate relationship between industry and science. The Committee is convinced that this mechanism was involved in the trials of the cholinesterase inhibitors, in the reports of the results and in the manufacturer's advertising texts (Bir00c, Goo01a, Goo00b, Koe99).

In order to safeguard independence, the editorial boards of various scientific journals have recently published more stringent requirements for publications concerning studies in which the pharmaceutical industry is involved (Mem01). This initiative was started by several medical journals, including the Nederlands Tijdschrift voor Geneeskunde (The Dutch Journal of Medicine) and renowned international journals such as The New England Journal of Medicine, The Lancet, The Journal of the American Medical Association and The British Medical Journal. Various universities are also drawing up a code of conduct for studies of this kind. The Committee feels that the state should take an active role in efforts to achieve scientific independence for studies into therapies for dementia. In addition to regulations and guidance, direct support for independent therapeutic research might reduce the risk that the situation will worsen.

The Committee sets great store by the development of objective, standardised methods for establishing the efficacy of current and future anti-dementia drugs for individual patients (6.1.5). Such methods would be based on the 'natural course' (i.e. without intervention) of dementia patients. In order to optimise the selection of patients who may benefit from a given drug, it is also important to have access to detailed data about patients who do or do not react to the drug in question. This data would, of course, be in such a form that it could not be traced back to the individual. The pharmaceutical industry has a wealth of clinical data on patients with Alzheimer's disease, derived from trials that were carried out as part of the registration of acetylcholinesterase inhibitors. Part of this can be found in the scientific articles relating to those studies, but only in aggregated form (averages). No details at the level of individual patients have been made public (Mel98).

Data of this kind, which could benefit research into anti-dementia drugs, was collected with the assistance of large groups of citizens. Yet obtaining access to this same data for the purposes of independent clinical scientific research is at best extremely difficult and at worst, quite impossible. It would be to the credit of the pharmaceutical industry if it were to make such data available, as a matter of course.

Chapter 7

Interventions: promoting well-being

The lack of a therapy does not mean that interventions can be omitted. Respect for the dignity of dementia patients dictates that all intervention options must be utilized that might help to assuage the symptoms, and to facilitate the patients' adaptation to the disease and their ability to deal with it. The objective of the treatment – in the broadest sense of the word – is maintaining or improving the quality of life experienced by the patients and their close friends and relatives. The treatment therefore incorporates medical, psychological and social components. It is preferably integrated and administered by multidisciplinary teams. Regardless of the stage of the disease or the location in which the patient is receiving care, optimum administration is important for interventions aimed at:

- utilizing functional abilities
- compensating for limitations
- retention of autonomy, individuality and dignity
- limiting the repercussions of associated somatic disorders, behavioural disturbances and psychiatric symptoms
- reinforcing communication options and retaining social contact
- reinforcing a feeling of safety
- using the opportunities for enjoyment
- acceptance of the disease and support in finding ways to deal with it.

The Committee also considers support to non-professional carers (informal care) to be an essential part of the treatment. This is not only to ensure that the carer is fit and able to care for the patient, it is also for the protection of the carers themselves.

There are major individual differences in the way in which cognitive deterioration, behavioural changes and mood swings manifest themselves, and in the ability of patients and those around them to deal with this. This requires a tailor-made approach, and the use of individual treatment plans.

7.1 Basic assumptions

7.1.1 Respect and communication

When dealing with dementia patients, the starting point is always respect for the individual, for his individuality and idiosyncrasies. A diagnosis of dementia does not mean that the patient is suddenly bereft of wishes and desires, or that he should be considered incapable of speaking for himself. While it is still possible, it is important to take the time to communicate *with* him, not just *about* him. Furthermore, his wishes with regard to treatment and guidance should always be taken into account (Act99, Ada97, Ben00a, Fis98, Gil01). This applies to all of those who have dealings with dementia patients: professional carers, non-professional carers, members of the family and others in the patient's social circle.

For information about the patient's state of health and well-being, physicians and other professional carers become increasingly dependent on the patient's relatives and friends. Thus it is essential that professionals make active efforts to achieve a relationship, based on mutual trust, with the patient's main informal carer or contact (APA97, Ham99b, Pat01). In addition, this provides a good basis for tackling discussions about bringing in more external help and support when required. Where more than one person is involved in the informal care, it is recommended to consult these individuals about who should be designated as the main contact.

Furthermore, it is important that all carers – professional or otherwise – be familiar with dementia and with the changes that it can bring about. Only in this way can they adequately respond to the patient's needs. Knowledge of the patient's background and history also contribute to his well-being (Zem99).

7.1.2 Basic care and general health

Once a diagnosis of dementia has been made, it is important for the attending physician to consult with the other professional carers to identify the type of basic care required. The starting point here is an evaluation of the functional abilities, based on information from the patient and his family. Basic help involves assistance with housekeeping (cleaning, grocery shopping, preparing food) and help with self-care (getting up, washing, dressing, eating, going to the toilet, going to bed). In the initial stages, care will usually be provided at home, by family members or by home care services. Either the limited availability of informal care or the severity of the illness may necessitate transferring the care to an institutional environment (day treatment, day care, nursing home or residential care home). Discussions with the patient and his close friends and relatives are of crucial importance when making decisions about what kind of care would be most appropriate. The next step is to put them in touch with agencies that can take over the task of caring.

The progressive nature of the disease requires that the medical, psychological and social needs of the patient and his carer be regularly evaluated. Interventions may also be undertaken, as the situation requires (AAN01a, APA97, Dal99, NHG98, Pat01, Sma97). The frequency of these evaluations depends on the stage of the disease, the nature of the treatments being given and the ability of those closest to the patient to cope.

It is particularly important that the patient's general state of health be carefully monitored. Disorders such as high blood pressure, diabetes, vitamin B-deficiency, Parkinsonism, balance and coordination disorders, infections, as well as sight and hearing disorders are common among the elderly. Regardless of whether the patient is institutionalised or at home, it is vital for his well-being that comorbidity is identified and treated in good time (Bai98, Gol96, Lar97, Näg98, Ric99, Wal97). An evaluation of the patient's cognitive and emotional symptoms, behaviour and functional status should also be part of the standard procedure. In the event of behavioural disturbances and psychiatric complications (depression, psychosis), the patient should be referred to a mental health institution or psychiatrist, without delay. Furthermore, it is essential to continually evaluate the result of the treatments being given and to determine whether continuation makes sense. In this patient group, it should be borne in mind that patient compliance and the reporting of adverse effects are often less than ideal. Allowance should also be made for diminished pain perception and reduced communication about pain (Sch99e, Sch00b). For patients living at home, issues such as their needs in terms of care and guidance should be addressed, as should the toll taken of the informal carer's mental and physical health (Dun98, Hal97, Sch95). If necessary, steps should be taken to boost the level of support to a more adequate level.

The provision of full information about the problems that can be expected to result from progressive deterioration enables both patient and carer to anticipate the future, thereby contributing towards their quality of life. Consideration should also be given to practical matters such as safety measures, as well as legal and financial matters. It can be useful to refer those involved to appropriate specialists and to draw their attention to the existence of patient associations, such as Alzheimer Nederland.

Patients with dementia generally do not find it easy to ask for help, nor is the informal care system always capable of determining when it would be useful to consult with a physician or a care giving institution. Partners in particular can be very stubborn when it comes to dealing with problems. In view of this, it is better if carers take the initiative in arranging a date for the next examination. The frequency of examinations should reflect the severity of the situation. It is essential that the patient and his carer be informed regarding circumstances that necessitate an earlier-than-planned contact (sudden deterioration, for example). It should be made clear to them that they should not be concerned about asking for assistance when it is needed.

The systematic monitoring of patient and carer, as set out above, is seldom achieved in practice.

7.1.3 Adjustment of the surroundings

Excessive stimulation and continual confrontation with situations that the demented patient is no longer capable of dealing with are troubling and frustrating. On the other hand, too little stimulation can induce a state of apathy (Drö99a). Like everyone else, dementia sufferers cannot manage without occasional contact with family and friends, interspersed with moments of solitude. If the patient's social and physical surroundings are adapted to suit his needs and abilities, this can help him to retain some sort of independence (APA97, Bra01b, Dal99, Fis98, Opi99, Pat01). Adaptations of this kind involve, for example, the house's interior layout (good lighting, simple layout) and the introduction of structure into the daily routine and social activities. Nevertheless, in the interests of protecting both the patient and those around him, it will be necessary to take certain steps to avoid hazardous situations (store cleaning materials in locked cupboards, keep matches out of reach, shut off the gas). It is important not to take over everything, to offer the patient simple choices and to involve him in the daily activities he was used to. Alzheimer Nederland has informative brochures about these 'ordinary' tasks, which are nevertheless so important for patients and informal carers.

Naturally, a good balance between activities and rest, socialising and privacy - suited to the individual patient - is not restricted to the domestic environment. In nursing and residential care homes, every effort should be made to maintain this balance.

7.2 Psychosocial interventions for patients

As previously mentioned, disturbances of psychological functioning and behaviour are partly due to psychosocial causes (2.2). Many different hypothetical models are currently in use to describe the psychosocial repercussions of cognitive deterioration with the objective to provide criteria for interventions (Fin00a). Some examples are set out below.

The adaptation-coping model asserts that the changes experienced by dementia sufferers lead to stress. They respond to this by coping, either consciously or unconsciously (Drö91). However, the most important instrument that they have at their disposal, their cognitive ability, is in a state of decline. Thus simple, daily social activities become increasingly stressful. This would give rise to anxiety and panic, leading – from an outsiders' point-of-view – to inadequate reactions (Che98, Drö98, Pur00). The nature of the behavioural disturbances is thought to be associated with the patient's coping strategies, the severity of his dementia, his personality and his social circumstances. Discussions with dementia sufferers have shown that they do indeed find it emotionally very difficult to adapt to the situation (Moo97, Phi98). There are several other models that are based on similar principles, including the 'Dialectical framework' concept, which was developed in Great Britain (Kit97). Models that are centred on adaptation and coping are most often used in the initial stages of dementia. They provide a basis for adopting the correct approach to patients and to the people who take care of them, and for offering appropriate assistance.

The essence of the disease process, according to another view, is that patients are compelled to continually and irreversibly take leave of their world. It is claimed that the behavioural disturbances exhibited by such patients contain elements of post-traumatic stress disorder. In some ways, they resemble a disturbed process of mourning. The process of dealing with loss is complicated by the fact that the loss in question is dynamic rather than static; it goes on and on. It is claimed that strange and stressful situations like this give rise to anxiety and to the need for safety. This would be expressed in the form of 'attachment behaviour', which involves instinctively maintaining proximity to a selected individual in the face of hazardous situations or loss. Dementia patients often express the wish to go home, repeatedly asking for their parents. This is seen as a form of attachment behaviour (Mie00b, Mie00a).

Psychosocial methods are an integral part of dealing with and caring for dementia patients. They can be seen as a treatment if they are used to ease specific problems either experienced or caused by dementia patients. This is true of all methods, with the exception of daily activities. While these serve a psychosocial purpose, they are so general in nature that they cannot be seen as a form of treatment.

Many of the psychosocial methods, with the exception of individual or group therapy, are also used in 24-hour care. This means that various combinations of these methods are an integral part of the provision of care, the main objective being to promote the quality of life within the nursing home.

7.2.1 *Cognitive approach*

This approach is aimed at activating (or re-activating) the cognitive functions through the use of memory training. The aim here is to retain the link with reality for as long as possible (Kas00, Spe00c). The best-known approach is reality orientation training (ROT), in which the patient is systematically provided with the correct information, any incorrect statements and behaviour are systematically corrected and independent behaviour is encouraged. In practice, ROT training does have some effect in some slightly demented patients, on the skills for which training is given. Generalised behavioural changes do not occur, and the effect disappears when the training is not combined with the same approach in 24-hour care (Hol97, Spe00b). As cognition deteriorates, the patient's confrontation with his own impotence often leads to further distress, incomprehension and frustration. For these reasons, there is a certain reticence about using cognition-oriented approaches (APA97, Dal99, Gag96, Sma97).

Some institutions use a derivative of ROT, known as the reality orientation approach, in the 24-hour care of patients in the initial phase of dementia. Some examples are reading newspapers together, activities related to the seasons, fixed daily structures and group conversations. It is not known whether these activities actually achieve the intended objective.

7.2.2 *Behavioural therapy approach*

Learning theory principles form the basis of the behavioural therapy approach. The stated objectives of this approach range from increased encouragement for the well-being activity level to encouragement of self-care and reduction of behavioural problems. A major factor in this approach is the reinforcement of appropriate behaviour, using responses or activities that the individual in question is known or expected to appreciate. The stimulus used can be either material or social in nature, such as a drink, a chat or a compliment. It might also be a pleasant pastime, such as listening to music or taking an outdoor stroll.

Behavioural therapy approaches are in widespread use, especially in institutional environments. There are reports in the literature of beneficial effects on self-care, incontinence, activity levels and behavioural problems (APA97, Bur00, Drö99a, Kas00, Opi99, Pla98).

7.2.3 *Activity programmes*

There are two broad categories of activity programmes: programmes with an emphasis on normal daily activities and therapeutically oriented activities. The first category is based on the assumption that everyone needs social contacts and activities that lend structure to their day-to-day lives. Daily activities that are suitable for dementia sufferers are painting, drawing, embroidery, handicraft, gymnastics, dancing and singing. Almost no systematic research has been carried out into the effectiveness of such programmes (Drö99a, Sco98). This is hardly surprising, since they are not generally presented as anything more than a useful way of passing the day.

The second category includes psychomotor therapy and music therapy, activities which – in addition to focusing on keeping patients occupied and providing social stimulation – also serve a therapeutic purpose. Psychomotor therapy consists of simple movement exercises in small groups. The idea behind this is that movement promotes emotional equilibrium and has a beneficial effect on self-image. Controlled studies have shown that psychomotor therapy can have a beneficial effect on patients suffering from slight to moderately severe dementia (Ale99, Drö99a, Drö01, Hop99b).

For dementia sufferers, making music or listening to it are pleasant ways to pass the time. Music is also used therapeutically, to promote emotional equilibrium. People retain musical ability into the late stages of dementia, which means that this approach is also suitable for patients with severe dementia. According to some reports, music therapy does indeed have beneficial effects (Bro97, Drö99a, Ger00, Kog00).

7.2.4 *Emotion-oriented approaches*

The purpose of emotion-oriented approaches is to improve dementia sufferers' ability to function both emotionally and socially. The main elements are the counselling of the cognitive, emotional and social consequences of the disease, and seeking a connection with the individual's subjective perceptions and his functional capabilities (Drö99b, Kit97, Mie00b, Woo01).

Validation Therapy involves the use of various verbal and non-verbal methods of communication attuned to the patient's current stage of dementia (Jon97b). The therapist joins the patient in exploring his perceptions, and confirming these regardless of their realism. The aim is to make him feel understood and accepted (Drö98, Ehr99, Fin00c, Gag96, Lan99). This approach has been found to produce beneficial results. Small-scale studies have shown that, when used in group situations, validation therapy can sometimes have a favourable effect on functioning, cognition and behaviour. The nature and the scope of these studies make it impossible to draw any firm conclusions (Bur00, Drö99a, Fin00c, Nea00, Sco98, Tou98).

The aim of *Reminiscence Therapy* is to beneficially effect the patient's intrapersonal and interpersonal functioning, by allowing him to relive memories, order them into some sort of structure, integrate them and discuss them with others. This is achieved using autobiographies, photograph albums, objects from the patient's past, as well as drama and role-playing. Patients and carers alike find reminiscence therapy to be a pleasant way to pass the time. Studies aimed at quantifying the effects obtained are still in the early stages. Some beneficial effects have already been reported (Drö98, Fin00c, Gag96, Kas00). It is not possible to make a definitive assessment of reminiscence therapy, given the nature and scope of the studies and the wide variation of techniques used (Pow00, Sco98, Spe00a).

Snoezelen (originally a Dutch word) was developed in the 1960s for severely mentally handicapped individuals. It is currently being used for patients with severe dementia. The method is based on stimulation of sensory perception, using light, odours, sounds, tastes and tangible materials. The objective is to establish contact and to induce rest and relaxation (Ver97). The duration of the effects, which include reduction of problem behaviour and mood improvement, presumably does not exceed the period of the therapy session (Bak01a, Bur00, Drö99a, Opi99, Pow00). Here too, a definitive assessment of the therapy's efficacy is hampered by methodological shortcomings (Fin00c, Sco98).

A large-scale, randomised study carried out in the Netherlands compared the effects of an integrated, emotion-oriented approach to care with the standard care given in nursing homes (Drö99b). Emotion-oriented care proved to be more effective. Patients' relations with their carers improved considerably, the latter being better able to meet the patients' individual needs. There was less anxiety and depression, and there was a beneficial effect on the self-image of less demented patients. After several months, the final assessment showed that people in the experimental group were (to the extent that they were able to express a view on this) more satisfied with their situation (Drö99b, Fin00b).

7.2.5 *Individual psychotherapy and group therapy*

In the initial stages, some dementia sufferers have a (partial) understanding of their situation (2.3.1). The aim of psychotherapy is to help them deal with the resultant emotions and to assist them to develop strategies for dealing with the repercussions of their disease. A psychodynamic approach has a central part to play here. This can be applied on an individual basis, or together with the patient's partner (Che98, Kas00, Mie00b). One relatively new development is the creation of discussion groups for dementia sufferers. These discussions, which take place under professional guidance, have a clearly defined structure. The main feature is a discussion of individual experiences (LaB95, Lan97, Pet99b). To date, little research has been carried out into the effectiveness of these approaches.

7.2.6 *Comments*

Research into psychosocial interventions is still at an early stage of development, hence the associated methodological weaknesses (Bec01, Mar01a, Mic01, Zar01). All survey articles and meta-analyses published to date echo this conclusion. There is considerable variation in the way that the various approaches are put into practice, and in their intended objectives. The study populations are often small, non-homogeneous and poorly defined. The lack of good control groups often means that it is difficult to reach a judgement regarding the specificity of interventions, so observed effects could just as easily be the result of beneficial attention and social interaction. The objectivity of the findings is sometimes at issue, since the method is applied and the results measured by the same person. Behaviours are not measured in a uniform way, nor are there any reliable methods for expressing dementia sufferers' quality of life in standard units (6.1.3). This impedes the comparison of results, and their expression in general terms. An added difficulty facing studies into the efficacy of integrated psychosocial guidance in 24-hour care is the strong interaction with the attitude of the professional carers involved. Research methods for use in such situations are under development.

Some patients in certain parts of some studies have experienced beneficial effects. This has given rise to the prevailing view that psychosocial intervention methods can have a beneficial effect on patients' quality of life, and that they are worthy of investigation using carefully designed studies.

In practice, before deciding to use a given psychosocial method, the symptoms to be combated should be investigated to determine whether they have any demonstrable and avoidable causes. The patient's surroundings and activities should be modified on the basis of the findings. In addition, infantilisation and frustration should be avoided, and the patient's capacities should be taken into account. It is important to identify the treatment objective in advance, and to regularly evaluate effects and adverse effects. Furthermore, the intervention should be stopped in good time if it is failing to achieve the intended objective.

In the case of severe, untreatable behavioural problems and psychiatric complications, it may be worth considering a switch to psychotropic drugs, or use of the latter in combination with psychosocial interventions (7.3). There have been very few studies of the relationship between the effects of pharmacological and non-pharmacological strategies (Opi99).

7.3 Psychotropic drugs

Psychotropic drugs are in large-scale use in the symptomatic treatment of behavioural problems and psychiatric complications. There are no exact details on current levels of use, for this indication, in the Netherlands.

7.3.1 Antipsychotics

Antipsychotics are used in the treatment of psychotic symptoms (hallucinations, delusions) and to combat other behavioural disturbances, including agitation and aggression.

Haloperidol and thioridazine are *classical* antipsychotic drugs. These drugs can be effective in the treatment of delusions and hallucinations, and sometimes also in combating agitation. However, the effect in dementia sufferers is much smaller than in young schizophrenic patients, for whom these drugs are often prescribed. In the trials, the placebo treatment proved to be remarkably effective (averaging 34 percent, Lan98). The sparse information available does not suggest that some drugs in this class are better than others (Bye01, Emr00, Lan98). What is clear, however, is that thioridazine has scarcely any effect (Chu00, Kir00). The adverse effects of classical antipsychotic drugs are much more severe and occur more often in dementia patients (in 25 to 50 percent of patients) than in young schizophrenic patients. Parkinson-like symptoms and orthostatic hypotension have been frequently observed. Both conditions are associated with an elevated risk of falling and breaking bones. There are also reports of oversedation and accelerated cognitive deterioration (Chu00, Dev00a, Jes00, May99, Mod99, Sto99).

The *new antipsychotic drugs* (including risperidone, olanzapine, quetiapine) have a theoretical advantage, since they produce fewer Parkinson-like symptoms and less sedation (Bye01, Chu00, Dav00, Emr00, Roj01). Two RCTs showed that risperidone was more effective than a placebo, and approximately as effective as haloperidol. It had fewer adverse effects, nor were there any unfavourable effects on cognition (Dey00a, Dey00b, Kat99). One remarkable feature here is the substantial effect obtained with placebo treatment. Another RCT showed that the preventive administration of olanzapine reduced the occurrence of psychotic symptoms (Cla01).

There are already indications that the new antipsychotic drugs (particularly risperidone) are more effective than the classical ones. However, a sufficient scientific basis for preferring them over other drugs is still lacking. There is a need for well-designed RCTs, in which various drugs, both classical and new, can be compared (Bye01, Con01, Dev00a). Furthermore, the new antipsychotic drugs are much more expensive that their classical counterparts, which justifies the use of a thorough cost-effectiveness analysis (Cum99). Finally, the large placebo effect certainly provides food for thought. The possibility cannot be excluded that the attention given to patients during the trials was effectively a type of psychosocial intervention (Bal99a, Cum99).

7.3.2 *Antidepressants*

Dementia can be accompanied by (symptoms of) depression. This can be treated by the administration of antidepressants. However, these drugs are also used for other behavioural symptoms, such as aggression and agitation. An RCT in which treatment with haloperidol was compared to behavioural therapy and a placebo showed reduced agitation in all groups, including the placebo group (Ter00). There are very few well-designed studies of dementia sufferers, indicating that antidepressants have some slight effect, but one drug is presumably just as good as another (May99, Tho01). There are exceptions, such as fluvoxamine - which has little or no effect (Ras98). The choice of an antidepressant drug is generally influenced by its adverse effects, which vary from patient to patient. Generally speaking, the use of anti-depressants with a marked anticholinergic effect (such as tricyclic antidepressants) is not recommended for dementia patients, because of their adverse effects: confusion, orthostatic hypotension and promoting cognitive deterioration. Serotonergic drugs are to be preferred, even though they too are not entirely free from adverse effects (APA97, Chu00, Emr00, Her01a, Mod99, Roj01, Sul00).

7.3.3 *Benzodiazepines*

Benzodiazepines are commonly used in the treatment of agitation, aggression, restlessness, insomnia and nocturnal wandering. A few, somewhat dated, published studies report beneficial results, but a lack of good diagnostic criteria coupled with other methodological weaknesses call their significance into question. Benzodiazepines are well tolerated, but they have unpleasant adverse effects, including cognitive deterioration, oversedation (increased risk of falls) and confusion. They can sometimes have exactly the opposite effect, namely increased agitation and aggression. Benzodiazepines are of limited use in the treatment of non-psychiatric symptoms, such as persistent sleep disorders or occasional acute anxiety disorders. Only short-acting variants are eligible and the duration of treatment should be limited, given the adverse effects mentioned above and the development of tolerance (All00, APA97, Chu00, Emr00, GR98b, Her01a, Roj01, Sma97).

7.3.4 *Anti-epilepsy drugs*

There are reports that anti-epilepsy drugs (carbamazepine, valproate) can have beneficial effects in the treatment of agitation, aggression and anxiety. No reliable RCTs have been carried out in this area. These drugs are probably no more effective than antipsychotics, and they can have severe adverse effects (renal toxicity and the inducement of organic psychiatric disorders). As a result, their use is only considered in cases of severe disorders that have failed to respond to other forms of (psychopharmaceutical) therapy (AAN01b, APA97, Chu00, Emr00, Her01a, May99, Mod99).

7.3.5 *Other psychotropic drugs*

Numerous other drugs have been incidentally tested for use in the treatment of behavioural disturbances and psychiatric complications, including beta blockers, lithium, buspirone, zolpidem, psychostimulants (amphetamine), bromocriptine and hormones (for symptoms of sexual disinhibition). The scientific data are not sufficiently compelling to justify the use of these drugs in the treatment of behavioural disturbances in dementia sufferers (AAN01b, APA97, Chu00, Her01a, Roj01).

7.3.6 *Comments*

There is only a narrow scientific basis to support the use of psychotropic drugs in the treatment of behavioural problems and psychiatric complications. As with psychosocial interventions, the study populations are often small, non-homogeneous and poorly defined. Here too, researchers are faced with the problem that there is no unambiguous way of measuring expressed behaviours. There is a great need for a reliable classification of behaviour, for an understanding of primary and secondary symptoms and their associated biological basis, and for the development of decision rules on how to deal with specific behaviours or combinations of behaviours. Well-designed prospective randomised studies are essential, not just for establishing the efficacy of separate drugs but also for comparing their efficacy.

Behavioural disturbances are not always psychiatric in nature. For this reason, before commencing psychopharmaceutical therapy, it is essential to evaluate the patient’s general medical condition, in order to eliminate underlying disorders and pain (arthritis, urinary tract infection, constipation) and to list the medication being used. Checks should also be carried out to determine whether certain conditions provoke the observed symptoms (noise, light, social events and interactions, type of approach), and if so, these should be modified.

When calculating the dosage of psychotropic drugs, it should be borne in mind that elderly people have reduced liver and kidney function (increased risk of toxicity) and are more likely to suffer from orthostatic hypotension (increased risk of falls). As a result, the initial dose is generally low. In the case of pharmacotherapy, as with other medications, it is important to identify the treatment objective in advance, to regularly evaluate effects and adverse effects and to suspend the treatment in good time if the intended changes are not achieved. Since psychiatric symptoms are sometimes transient in nature, it is recommended that treatment with psychotropic drugs should be suspended after a period of time, even if it has been successful, to see whether the patient can manage without it.

7.4 Other interventions for patients

In the case of severe depression that does not react to antidepressants, it might be useful to consider electroconvulsive therapy (ECT, electroshock). The fact that a patient is demented is not a contra-indication (APA97, NVP00, Wei01).

Sleep disturbances and nocturnal agitation, are common. This is hard on the carers. Measures for nighttime hygiene or the use of psychotropic drugs are often of no help. Light therapy may be a useful option in this connection. Various studies have shown that exposure to bright ambient lighting for several hours per day can have a beneficial effect, such as improving circadian rhythm, sleep, mood, cognition and behaviour (see, for example, Gra01, Haf01, Mis00, Rhe98, Som00, Yam00). As yet, it is not clear for how long these effects persist or whether it is possible to predict which patients will respond favourably to this therapy.

Transcutaneous electrical neurostimulation (TENS) is a method aimed at the reactivation of nerve cells. Studies carried out in the Netherlands into the use of TENS in AD patients, indicate that it has beneficial effects on cognition, behaviour and sleep-wake rhythm (Som98, Sch99c, Sch99d). These findings have yet to be confirmed by other workers.

7.5 Interventions for informal carers

During the past 15 years, a variety of methods have been developed for increasing the ability of informal carers to cope. The main components are education and information, as well as emotional, practical and social support. The principal forms of support are contact with fellow sufferers, informative meetings, written information material, telephone support services, respite care (temporary relief either at home or elsewhere) and psychosocial interventions on an individual basis. Relatively recently, counselling activities have been developed for the wider family circle. This is because it has become increasingly clear that the way in which families communicate, solve problems and support one another, has repercussions for both carer and patient (Lie99, Mit00b, Rob98).

The provision of support activities in the Netherlands varies from region to region. Contact discussion groups, chaired by a trained discussion leader, provide information and emotional support. Mental health institutions often take the initiative in this regard. Regional provision often includes informal care advice centres, which supply information and advice, and services that provide respite care. Other forms of respite care include day treatment in nursing homes, day care in residential care homes and temporary admission in the event that the informal carer falls ill or experiences other problems. Some psychogeriatric nursing homes offer carers support in the form of social work, information meetings and personal advice. Brochures and other information material supplied by Alzheimer Nederland are available to anyone. Alzheimer Nederland also has a national telephone help line. Recent forms of support are primarily characterised by easy accessibility. Some examples are meeting centres designed along the model of the Amsterdam Meeting Centres (Drö96a) and the Alzheimer café (Mie98). The internet is expected to play a part in the provision of information, and as a medium for the exchange of experiences (Whi00).

7.5.1 *Effectiveness*

Partly as a result of pressure from the rising costs of the health service, there has been a gradual increase in the amount of systematic research into the effectiveness of the interventions for informal carers. Reducing the amount of stress experienced by informal carers is of prime importance, rather than improving the patient's condition. Nevertheless, by teaching the carers how to respond more adequately to the patients needs, it is quite possible that the interventions for carers are beneficial for patients (Car99, Gor00, Ham99b, Hau00a, Mar00a).

The results of effectiveness studies vary. Some identified a beneficial effect, while others did not (Coo01, Gof96, Kan97, Pus01, Tho00, Ver00b, Zar99, Zar01). A few studies showed that intensive, multidisciplinary support activities for carers could lead to postponements of admission to a nursing home ranging from several months to a year (Mit96, Drö00, Mit00b). A combination of the various interventions (information, emotional and practical support) and individual attunement are probably important for success (Drö00, Gof96, Gor00, Ver00b).

7.5.2 *Comments*

Literature reports give various study results, while failing to describe the intended goal of the intervention (Coo01, Gof96, Tho00). A telephone help line, for example, which is set up to provide information, to offer a way for people to vent their feeling and to give advice, will have achieved its goal once the general public starts to make use of this facility. A respite care service that is intended to give informal carers some time to themselves will have achieved its goal once these individuals start making use of this option. If the aim is to investigate long-term effects on the well-being of informal carers (leaving aside the issue of whether or not it is appropriate to expect these activities to produce this effect) then the researchers must measure the carers' psychological and physical functioning over a protracted period of time and use a good control group for reference. Another goal of an intervention for informal carers might be, for example, the postponement of a patient's admission to a nursing home. Even if research fails to find such a postponement, it cannot be concluded that the intervention was of no benefit to the carers. One might even hypothesise that interventions aimed at promoting the psychological functioning of carers would achieve the opposite effect: they might bring forward the time of admission, since the carer will be better able to realise that he has reached the limits of his coping ability. Whatever the case may be, the measurement methods selected to evaluate the intervention should be appropriate to that intervention's intended goal. This is often not the case.

In addition, because of the wide range of outcome measures used it is almost impossible to make meaningful comparisons between studies. This factor is presumably largely responsible for the inconsistency of the results. While blinding is often not feasible in this area of research, many studies fail to make use of independent observers for the collection of the data. Moreover, it is not easy to assemble a good control group and this is sometimes omitted. This also undermines the significance of the studies.

Another point for consideration is the balance between burden of care and ability to cope. One of the problems that informal carers often face is a shortage of actual practical assistance in care giving. An inadequate availability of professional care for the patient can conceal the real beneficial effects of the interventions, thereby leading to inconsistent results.

These flaws confound the interpretation of the results. Thus the authors of survey articles invariably reach the conclusion that research into the effectiveness of interventions for informal carers is still quite poorly developed. The only way to obtain a clear picture of the effectiveness of the various forms of support is by taking a systematic approach, and using valid experimental designs (Bur01, Coo01, Gof96, Kan97, Pus01, Tho00, Zar99, Zar01).

Finally, little or no research has been carried out into how informal carers actually provide care (Mon01). Information of this kind is indispensable when seeking intervention points for support, as well as an understanding of the needs, requirements and expectations of informal carers with regard to actual professional help in caring for demented patients. These points should not be neglected in the further development of interventions for informal carers.

Some cautious recommendations for everyday practice can be derived from currently available data. A combination of varied forms of support, adapted both to the individual and to the situation, is preferable to a single form of support or to a standard package. If the intervention is to succeed, it is important that support and information be available throughout the entire disease process and not just in times of need. Furthermore, the Committee takes the view that it is vitally important to remain aware of the fact that the provision of support for carers neither can nor should be used as compensation for inadequate home care facilities (see also 9.3.2).

Chapter 8

Decisions made by and for people with dementia

The process of dementia transforms an independent human being, capable of making his own choices, to someone who is dependent on decisions taken on his behalf by other people. A major facet of decision-making is that one is aware of the consequences of the available choices or, at the very least, has a feeling or impression of the consequences involved. Dementia sufferers gradually lose this ability, eventually becoming ‘legally incompetent’. The first section deals with the concept of legal incompetence, both in theory and in practice, while the second covers medical research involving dementia sufferers. As the disease progresses, the decisions taken by others impinge upon more and more parts of the patient’s life, from everyday matters such as the daily round, activities and freedom of movement, to issues related to care and treatment. These matters are addressed in the third section, including the consequences of advance directives for treatment decisions. In the final section consideration is given to decision-making on starting, continuing or suspending life-extending treatments and termination of life at request of dementia sufferers.

8.1 Competence

In principle, the patient has the right to make his own decisions regarding care, examination and treatment. This is based on the assumption that each person is best able to decide what is good for him or her. It is in keeping with the constitutional right to control of one’s own body. The general rights of patients are set out in the Medical

Treatment Agreements Act (WGBO) and incorporated in the Netherlands Civil Code (BW division 5, book 7).

Without the patient's permission, there can be no care, examination and treatment. If such permission is to be valid then it must meet three conditions. Firstly, the individual concerned must be legally competent, secondly he must have sufficient information to make a choice and thirdly his permission should be voluntary in nature. The right to health care is based on the principle that the individual in question is considered capable of giving such permission until evidence is obtained to the contrary.

The concept of competence is far from unambiguous. This much is clear from the extensive literature on the subject that has been published in recent years. This is clearly far from being a cut and dried issue.

8.1.1 Practical implementation of the concept

The WGBO states that an individual is legally incompetent if he is 'incapable of reasonably evaluating his interests in the matter in question' (article 7: 465 paragraph 2 BW). The law does not stipulate the means to be used to determine whether or not someone is legally incompetent in this sense. The condition here is further expansion of the concept of competence, the formulation of evaluation criteria that flow from this and the design of a method for measuring the extent to which an individual meets the criteria in question.

The legal and ethical literature on this subject generally stress the view that competence should be understood to mean 'the ability to take decisions'. If an individual's ability to make decisions does not satisfy a given standard, then – in the interests of his own well-being – it is justifiable to deny him a given amount of authority to make decisions. In this sense, a judgement of competence is a normative judgement. Thus the evaluation of competence cannot be based on a description of an individual's characteristics or psychological profile alone. It also requires that criteria be put into effect and that standards be drawn up with which to evaluate the patient's ability to make decisions. The evaluation of competence is based on the quality of the process leading up to the decision itself, rather than the result of the decision that the patient takes or is going to take.

A wide range of criteria has been proposed for the evaluation of competence. The following criteria can be seen as the greatest common denominator of the proposals put forward in the literature (Ber00b):

- the ability to make a choice and to express it
- the ability to understand relevant information
- the ability to evaluate the nature of the situation and its possible consequences
- the ability to use information in a rational way.

The four criteria are arranged in a sequence of ever more rigorous demands placed on the decision-making ability of the individual in question: the first criterion is the least rigorous, and each following criterion is based on the assumption that the preceding criterion has been met. The more criteria met by a patient, the more competent he is judged to be. Health law generally draws the line at the ability to understand relevant information and to take stock of the consequences of this decision.

The WGBO makes mention of an evaluation of interests in the matter in question, which implies that incompetence in the legal sense is context dependent, i.e. dependent on the subject of the decision and on the complexity of the situation. This means that a judgement of legal incompetence is restricted to just one particular decision or type of decision. It does not represent a carte blanche for the adoption of a paternalistic approach in other situations. Patients who are no longer competent to take far-reaching decisions concerning their treatment can still have sufficient decision-making ability to designate a representative (Bra00).

The government has drawn up guidelines for providing assistance in practice (MvJ94). While this helping hand contains the above-mentioned basic assumptions, it does not include any instruments and methods for an actual evaluation of competence. In practice, physicians generally see competence as a dynamic and context-dependent, rather than as a static, unchanging characteristic of the patient. This means that they make evaluations on a situation-by-situation basis about whether the patient is able to determine what he wants. In doing so, they do not follow any standard procedure. In some cases they make use of neuropsychological examinations, but their judgement is usually based on intuition, experience and consultations with other members of the team, other colleagues and members of the patient's family. This is often sufficient, but dubious cases still occur in practice. A recent survey of physicians revealed a need for methods and instruments that might be of use to them in determining a patient's competence (ZON00).

One characteristic of dementia is a gradual deterioration of the ability to think rationally, to abstract and to reflect. These abilities do not disappear overnight. This means that a diagnosis of 'dementia' does not, by definition, imply legal incompetence, especially since the current view of legal incompetence is context dependent. The matter of whether someone with dementia is legally incompetent depends on the one hand to what extent he has lost the ability to make decisions and, on the other hand, on the nature of the decision in question.

8.1.2 *Remarks concerning the concept*

Legal incompetence is a concept that has not yet fully taken shape. Decision-making capacity is a central pillar of the current approach. Patients are considered to be competent if they can comprehend the relevant information for the situation in question and can take stock of the consequences of the decision. Some consider that it would be more appropriate if, in addition to the complexity of the subject, the limit value were dependent on what is at stake in the actual situation (Ber00b, CAL97, Kli91). They feel that a risk-dependent, variable criterion has the advantage that a declaration of legal incompetence would be less likely, as would a general disqualification of the individual in question.

Another remark relates to the prominent place allotted to the individual in the current approach, and to his cognitive and rational abilities, skills and limitations. Various authors point out that contextual and relational aspects equally influence the decision-making process. This concerns the role of emotions in decision-making, as well as that of identity and identification (the vision of the individual that people wish to be, a given self-image). There is also the patient's personal history and life story, and the way in which communication takes place between the care provider and the patient, and between the patient's close friends and relatives (Ber01, Meu96). They feel that these aspects and perspectives should have a place in discussions about responsible ways of dealing with a judgement of legal incompetence.

8.1.3 *Instruments for measuring the competence of dementia sufferers*

Due to the above-mentioned conceptual problems and other difficulties, the development of methods and instruments that are able to lend support to the evaluation of a patient's competence is proceeding at a snail's pace. With regard to the evaluation of competence in elderly dementia sufferers, the so-called *Amsterdam vignette method* was the first attempt at a standardised measurement method in the Netherlands (Gou97). This involved using patients' responses to descriptions of the medical problems of fictional cases and medical research (vignettes) in an attempt to reach a judgement concerning their competence in the matter in question. One objection to methods that test decision-making capacity through the use of imaginary situations is that the individual's choice has no direct consequences for him. These are hypothetical decisions, entirely free of personal, emotional involvement. It is unclear whether this approach provides more insight into competence or whether it mainly tests an individual's ability to empathise with imaginary situations. The above-mentioned study group is currently engaged in further development work on the method, in order to eliminate this objection.

Leaving aside the question of whether measurement instruments really measure what they are assumed to measure, it is useful to realise that a judgement on competence is not simply a technical judgement that can be expressed as a single score on a ‘scale of competence’. However scientifically sound the instrument being used may be, it is simply one aid for reaching a judgement that is also influenced by considerations and arguments related to the interests of the individual in question.

The Committee feels that there is a clear need to specifically define the term ‘competence’ in relation to dementia, and on the basis of this definition to establish which measurement techniques and instruments are suitable for use as aids in assessing the competence of people with dementia.

8.1.4 Representation

If the patient is legally incompetent, then the carer must approach one of the patient’s representatives in order to obtain any permission that may be required. The WGBO identifies three representation regimes. These are legal representation, personal authorisation and representation without previous nomination. In practice, cases of dementia mainly involve the latter two forms of representation.

The authorisation option is intended for those who are still competent, but who anticipate that this will cease to be the case at some point in the future. Such individuals can authorise others to represent them in the event that they become legally incompetent. If no legal representative has been appointed by the court, such as a mentor, and if no one has been given authorisation, then a representative without previous nomination can take on this role. This might be the patient’s spouse or partner or (in the event that there is no spouse or partner, or that this individual is unwilling to serve in this capacity) a parent, child, brother or sister (WGBO article 7: 465 paragraph 3 BW).

The representative is obliged to behave as a ‘good representative’ (WGBO article 465, paragraph 5 BW). This means that he is obliged to take as much account as possible of the patient (or the patient’s previously expressed views) when carrying out his task. As is made clear in the following sections, this task is not always an easy one.

8.2 Participation in scientific research

Scientific testing of the effects of potential interventions on the target group is part of the quest for treatments for dementia. A favourable judgement from an ethics committee is required for any planned scientific study involving patients (WMO article 2 paragraph

2). The committee's evaluation focuses on three points. The first of these is scientific clarity, while the second is the benefits and disadvantages for the patient balanced against the benefits of scientific progress. Finally, there is the matter of informed consent given by the patient or by his representative (WMO articles 3 and 6, paragraphs 3 and 4). If the patient is not competent to give permission for a non-therapeutic study, additional requirements are applicable[a]* (see also 8.2.2 and 9.3).

There is a great need for research. This does not detract from the fact that researchers and assessors must continually be aware that dementia sufferers are in a very vulnerable position. Some aspects of scientific research on dementia sufferers are set out below.

8.2.1 *Validity of permission*

It is sometimes easy to motivate people to participate in scientific research, since they unquestioningly assume that they will gain therapeutic benefits from doing so. They assume that the investigator's actions are primarily focused on their individual well-being, and fail to realise that the objective of medical research is primarily scientific. In 6.4.1, the Committee examined the question of therapeutic illusion. This is a distortion of reality that arises all too easily, since dementia sufferers have absolutely no prospect of a curative treatment. As a result, patients and their carers tend to focus on the possible benefits of participating in experimental studies. They are not inclined to think about the possible disadvantages involved.

Thus any consent to participate in scientific research is only valid if the candidates (or their representatives) have a realistic picture of the aims and content of the study, and of the possible risks and inconveniences to which they will be exposed. They must also appreciate that the study is essentially an experiment. As previously stated, dementia is ultimately fatal and there is no prospect of effective treatment. This causes patients and their representatives to focus on possible benefits and to largely ignore, or underestimate, the possible disadvantages of an experimental treatment. In other words, this group is particularly susceptible to therapeutic illusion, and may well fall victim to it (AAN98). Research has confirmed that, in everyday practice, the hope of improving one's lot is an important motivation for participating in drug research (Sug01).

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* The WMO states, in article 4, that scientific research on incompetent subjects is prohibited
- unless the research may also benefit the test subject in question, so-called 'therapeutic' research
- in the case of research in which no benefit is to be expected for the test subject, so-called'non-therapeutic' research: unless the research cannot be carried out without the cooperation of test subjects from the category to which the person belongs, and the research involves negligible risk and only minimal burden.

If the test subject resists then research cannot be carried out on that test subject.

There is a risk that consent to participate may be rendered invalid – in ethical and legal terms – by a view of reality that has been distorted by therapeutic illusion (AAN98). This places great demands on the process of informing potential test subjects and their representatives and requires careful testing of the decision-making process. If the patient and the individual who will be conducting the study have a relationship based on mutual trust, then there is a risk that the distinction between care and experiment will become blurred. It is therefore recommended that a fellow physician, one who is not involved in the study, be asked to provide all the necessary information and to participate in the decision-making process.

8.2.2 The test subject's competence

An important condition for the validity of an individual's consent to participate in scientific research concerns the competence of the person who actually consents. Dementia sufferers are not usually able to meet this requirement. In such cases, non-therapeutic research involving more than a minimum burden or minimum risk would be prohibited. Other types of research involving legally incompetent patients are only allowed to take place if a representative grants written permission. In order of priority, those who are eligible to act as representatives are the legal representative, an individual granted written authorisation, or the partner or lifetime companion (WMO article 6 paragraph 1c). Beyond the stipulations of the WGBO, the WMO states that the patient's brothers, sisters and children cannot act as his representatives. However, in the case of dementia sufferers who have no partner, it is often these individuals who act as representatives in matters of care and treatment (Her98). The Committee recommends that article 6 paragraph 1c of the WMO should be modified in such a way that the patient's brothers, sisters and children become eligible to act as representatives.

Unlike the provision of care, studies involving test subjects with dementia cannot automatically make use of the principle 'competent until evidence is obtained to the contrary'. This is because the intervention to be studied is not in the patient's interest, or not primarily in his interest. Instead it serves a scientific purpose. In the case of dementia, it would therefore seem reasonable to test the competence of all potential participants in the study. Someone with expertise in this area should carry out such testing.

In addition, the Committee advocates the view that study protocols should include a description of the way in which the investigators plan to deal with the issue of competence. This section should also identify those responsible for making a judgement of legal incompetence. Research carried out on such patients will be more meticulous and will gain more significance if publications routinely contain details of how the investigators dealt with the issue of legal incompetence or competence.

Of course, the investigator will carefully monitor the patient's general condition throughout the study. It is recommended that the views of the most closely involved carer, concerning the patient's well-being, be taken into consideration, even if that carer is not the designated representative.

With dementia sufferers, the situation can occur that a patient is legally competent at the start of a therapeutic study (and is therefore able to reach his own decisions concerning participation) but that he gradually becomes incompetent during the course of the study. The question is then whether he should continue to participate in the study. In that case, the representative must give his permission for continuation of the patient's participation in the study. If such a situation can be foreseen, it is recommended that a representative should be involved when the patient initially agrees to participate in the study. Any resistance shown by patients who have meanwhile become legally incompetent should always be respected.

The situation surrounding non-therapeutic studies is more complex. Studies of this kind, involving legally incompetent individuals, are subject to strict conditions imposed by the WMO (see note in 8.2). According to current legislation, if patients become legally incompetent in the course of a non-therapeutic study, it is inappropriate to continue their participation in the study on the basis of their previous consent. After all, the study in question does not need to use only legally incompetent patients. However, if researchers take the view that they do not want to end the patient's participation in the study they must at the start of the study, then they must determine whether the test subjects involved might be expected to become legally incompetent in the course of the study. They must also design the study to conform to the strict requirements of the WMO.

This raises the question of whether people should be given the opportunity to register in advance their willingness to participate in scientific research in the field of dementia, in the event that they should develop this disease. Current legislation makes no allowance for this, since consent is given so far in advance that protocols for such studies have not yet been drawn up. This precludes the possibility of the individual in question giving specific, informed consent. The Committee believes that the option of advance consent is an idea worthy of consideration. It recommends that an investigation be carried out to determine whether there is a genuine requirement for such a measure and whether such declarations could be made ethically and legally acceptable (Ber98).

8.3 Deciding on care and treatment

As previously stated, dementia sufferers are not by definition legally incompetent. Ideally, a patient's authority should always depend on his condition and on the nature of the decision. Carers generally weigh up the pros and cons on the basis of intuition and experience. Care and treatment must constantly be governed by the needs and wishes of the patient, to the extent that he is able to express them. Even if there is a very good reason for taking decisions on behalf of the patient, people should not hesitate to revoke a previous decision if he shows signs of resistance or communicates in some other way that he is dissatisfied or unhappy with what is happening.

8.3.1 Daily care and guidance

Those caring for dementia sufferers, especially informal carers, should decide how much freedom the patient should have and in what situations they should take command. In many cases, such issues will have arisen even before a clear diagnosis has been made. The progressive deterioration means that carers will repeatedly have to revise this evaluation, and that they will have to take command more often.

Dementia sufferers rapidly deteriorate to the point at which they have little or no ability to understand the results of actions and to associate these with consequences (Mar99). In combination with forgetfulness and increasing clumsiness, it is quite probable that they will place their own safety, and that of others, at risk. When considering what measures to take, it should be remembered that all interventions in this area infringe on the patient's freedom. Some patients are able to deal with the loss of independence, others are more profoundly affected. Paternalistic attitudes give rise to feelings of inferiority in those who have always attached great importance to being independent. Others see such attitudes as liberating them from responsibilities that they are no longer capable of dealing with (Ber95, Pul99). There are no ready-made rules for dealing with the issue of whether it is better to completely avoid situations in which there is an element of risk or whether it is better to just let the patient get on with things, only intervening when danger threatens. One consequence of the latter option is the need of permanent guidance. In such cases, informal carers should also think of themselves and try to find a satisfactory balance between freedom and protection, and between their best interests and those of the patient.

Not every informal carer is capable of dealing with this task. The literature makes mention of neglect, locking up, verbal aggression and physical violence (Col00, Com97, Com99, Hir01, Mar97, Mie00c, Pot96b, Wol98b). It is not possible to give a precise indication of the frequency with which such situations occur. It presumably ranges from one to a few percent of cases (Hir01). The emotionally charged nature of the subject makes it difficult to carry out research in this area. Professional care providers should be alert to signs of this phenomenon. The provision of psychosocial support to informal carers, at an early stage of the patient's disease, can help to prevent the situation from worsening. For this reason also, those providing treatment should pay particular attention to the burden on the carer, and they should take steps if there is a risk of overburdening (7.1.2). They should attempt to discuss the subject if they suspect that there is a risk of the situation getting out of hand. This is an extremely difficult task. When confronted with such a situation, professional carers are best advised to consult with others first rather than acting immediately. The attending physician can attempt to interview the informal carer and the patient separately. If necessary, he can arrange for a house call by a socio-psychiatric nurse, for example.

The increasing dependence that is associated with the process of dementia is another factor that professional carers cannot ignore. After all, a major element of their work is that they take over duties and decisions, either independently or in consultation with the patient's family or other medical colleagues. It is important that, in their dealings with the patient, they give the latter sufficient scope and opportunity to express his wishes. Above all, they should avoid the thoughtless adoption of a paternalistic attitude. When dealing with patients, their individuality should always be the guideline rather than the diagnosis of dementia (Hea99, Kan97).

The WGBO applies to medical procedures in the broadest sense, including care and nursing provided within that context. All carers who operate in the area of medicine, as defined in the WGBO, and who carry out these procedures in the course of practising a profession or a business, are subject to the WGBO (article 7: 446 BW). This means that, for certain procedures, psychosocial carers are also subject to the provisions of the WGBO. However, this does not apply to members of the household who are, for example, dressing a wound. The WGBO does not formally apply to areas of other than medical procedures. Nevertheless, it is recommended that professional carers operate in ways analogous to the WGBO. One implication of this is that, in the case of patients who are legally incompetent, the consent of the patient's representative should be sought concerning fundamental decisions in the area of nursing or care (NVVz97).

8.3.2 Admission to a nursing home or residential care home

The majority of patients will ultimately be admitted to a nursing home or residential care home. Following admission to a psychogeriatric nursing home, the provisions of the Psychiatric Hospitals (Compulsory Admission) Act (WBOPZ) come into effect. According to this Act, psychiatric patients can be compulsorily admitted if they are not prepared to be admitted voluntarily. Since psychogeriatric patients in general, and dementia sufferers in particular, are often incapable of showing willingness, a separate regulation has been included in the Act specifically for them (WBOPZ article 60 and subsequent articles). If the patient neither objects nor shows willingness, then an independent committee must examine the need for admission. If the patient resists –

either verbally or non-verbally – admission to a psychogeriatric nursing home, then the procedure for enforced admission must be followed (article 3 WBOPZ).

The WBOPZ is not applicable in cases of admission to a somatic nursing home or a residential care home. In practice, it is the patient's representative who consents to admission (as part of the patient's medical treatment), in accordance with or analogous to the WGBO. Nor are there any statutory regulations comparable to the WBOPZ for dealing with resistance to admission to these institutions, or involving the use of compulsion.

Views have been expressed in favour of extending the sphere of operation of the WBOPZ to include (parts of) residential care homes, since compulsion can also occur in that context. This too, requires statutory regulation. Others feel that it would be better if the WBOPZ were restricted to psychiatric hospitals, and if separate legislation were to be designed for the care sector (Lee00). Given the considerable differences that exist between psychiatric patients and the patients and residents in nursing homes and residential care homes, and in view of the special nature of dementia, there is much to be said in favour of separate legislation.

8.3.3 Medical treatments

One of the main rules of the WGBO is that the physician and other care providers seek consent before initiating a particular course of treatment. There are two exceptions to this rule: emergencies and minor procedures. In such situations, they can proceed on the basis of presumed consent. The patient can claim the right to effective care, which – in the WGBO – means that the carer's actions are dictated by the medical-professional standard (using medical procedures that are in accordance with the knowledge of medical science and experience). The wishes of the patient or his representative cannot simply brush aside the carer's personal responsibility.

The Committee emphasises that decisions concerning the treatment must be arrived at in dialogue with the patient as long as communication is ever possible. There is a tendency to talk at length about the patient and to have too little conversation with the patient himself. Even in the case of a fundamental decision for which the patient is insufficiently competent, and which is taken in consultation with the patient's representative, it is important to take the time and trouble to discuss it with the patient.

Decisions on the basis of an advance directive

An advance directive is a document drawn up by a legally competent individual in order to influence decisions about his future medical treatment and care, in case he is no longer able to do so. With regard to the legal status of advance directives, it is important to distinguish between negative directives (which contain an individual's wishes pertaining to the *withholding of actions*) and positive directives (which contain an *order to act*). This distinction is important since patients do have the right to refuse treatment on the basis of article 11 of the Constitution (inviolability of the body), while there is no legal basis for compelling others to perform certain actions. Those who draw up a negative advance directive withhold their permission, in advance, for certain medical actions to be performed. A negative advance directive can be general in nature, such as a declaration that the individual in question does not wish to be resuscitated. Alternatively, it can be worded conditionally, such that in a given set of circumstances, the individual wishes to waive certain treatments, which are set out in detail. One such example is that, in a given stage of dementia, the individual withholds permission for drip-feeding. Positive advance directives include an authorisation to commence or continue certain actions. These too can be either general in nature, or conditionally worded. A positive advance directive is a wish, to be honoured by those providing treatment, if it falls within the scope of their professional responsibilities. If they do not consider this to be the case then they will not follow the dictates of the advance directive. The most powerful example of a positive advance directive is the so-called euthanasia passport or living will, which is dealt with in paragraph 8.4.

In article 7: 450, paragraph 3 BW, the WGBO explicitly stipulates that physicians are compelled to respect a negative advance directive, unless they have well-founded reasons for not doing so. Well-founded reasons might be that the directive is based on outdated information or where the physician doubts about its authenticity. Advance directives come into play when it has been determined that the patient is incapable of participating in a decision-making process regarding the treatment in question. Difficult situations can arise where the view of the family or of another representative of the patient, conflicts with the content of the advance directive. These individuals are not authorised to lay the advance directive aside. Physicians are well advised to make it quite clear, starting with their first contact with the family, that while they respect the family's views, it is the patient's views that must come first.

Still other problems can arise in connection with advance directives. Written wishes are often too generally phrased to be directly applicable. Some degree of interpretation is almost always required (Her01b, NVVz95, TK99, Wid01b). In particular, physicians must determine whether the current situation actually corresponds to the situation described by the author of the directive, in which he wishes to waive the intervention in question. Someone can have stipulated, for example, that he wishes to have no further treatment, except for measures to combat pain and discomfort, once he is no longer capable – as a result of dementia – of recognising members of his family and those closest to him. Physicians have to ask themselves if this is the case when the patient forgets the names of those closest to him, or only when he suspects that the patient no longer sees them as ‘special’ people. Even more difficult is the situation in which the patient still remembers some of his loved ones but not others, or if a patient sometimes recognises a given individual as being someone close to him and sometimes does not. The types of action that the author of an advance directive has waived can also raise dilemmas that call for further interpretation. Few people realise that waiving medical treatment does not automatically result in a dignified end to one’s life, even though that was the very reason for drawing up a non-treatment directive. What should be done, for example, if a physically fit patient who has rejected all forms of medical treatment (except for measures to combat pain and discomfort) falls and breaks his hip? In order to bring about a peaceful death, it is not always enough just to combat pain and symptoms. In short, the attending physician must sometimes conclude that by intervening he can more closely approach the spirit of the advance directive than if he were to adhere to the letter of the ‘treatment ban’ (Her01b, NVVA97). In such cases, he must be able to justify his decision to deviate from the advance directive.

Decisions in the absence of an advance directive

If the patient is no longer able to make decisions concerning his treatment, and there is no advance directive, then his representative will have to give permission for radical treatment, on the patient’s behalf. Being a good representative means working on the basis of what the patient would have wanted in the situation in question. The representative is usually well acquainted with the patient and with his views on the major values in life. His decisions can then be seen as being in accordance with the so-called presumed will of the patient. In practice, however, it is sometimes unavoidable that decisions taken by the representative are coloured by what he himself would have decided under the same circumstances. Furthermore, it is sometimes difficult to detach the decision from one’s personal interest, in cases where the representative is also the patient’s main carer. Representatives should be aware of this risk. For many people, taking decisions on behalf of someone else is a huge responsibility, an act that gives rise to painful emotions (DCE98, Del99b, For00, Ver00a). If family members (or other family members) do not agree with the representative’s views concerning the presumed will of the patient, then family conflicts can develop.

Naturally, nurses and other professional carers who deal with the patient on a daily basis also have an opinion about what is good for him and what is not. While incorporating such views in their deliberations, attending physicians will always retain their own area of responsibility (Kei01).

It is essential that the medical team maintain a dialogue with the representative and other close friends and relatives of the patient, in order to create a basis for the requisite decisions. If the representative nevertheless wishes to force through a decision that is contrary to medical professional standards, then – in consultation with his team – the physician is free to do what he feels is best.

8.3.4 *The importance of advance directives*

Various authors are highly critical of strictly implementing the wishes set out in advance directives (Bau00, Ber00c, Ema00, Har99b, Pul99, Sai01, Ver00a, Wid01a). They point out that, even where a patient's decisions are the result of a rational decision-making process based on objective information and individual preferences, the standard interpretation of autonomy has its limitations. They put forward the argument that people adapt their wishes to the specific circumstances of the moment. They state that people cannot foresee what it means to be demented and that they cannot reconsider their decision, once they have become demented. Another point of criticism is that people are social beings who make their choices in relation to significant others. Seen from that perspective, decision-making is the result of a process of communication and interaction with others. It is not merely a set of logical deductions made by a single individual. When seen from this perspective, advance directives are more like instruments that allow the patient, his family and any others who are involved an opportunity to discuss the final phase of life. The values raised during this process are important to the patient, and can be used as a basis for the policy to be followed.

Against this, the Committee takes the view that while it is not possible to say how one will feel about a future situation before it actually occurs, it is likely that anyone who draws up an advance directive in case he becomes demented is well aware of that risk (GR94). The Committee also feels that it is reasonable to assume that someone who draws up an advance directive has discussed that matter with members of his family as well as other beloved ones, and will take their wishes and feelings into account.

The Committee believes that carers, regardless of their personal opinions or scruples, should comply with a negative advance directive to the best of their ability. Given the existence of an advance directive, in the event of problems of interpretation the carer will make every effort to determine what the patient would have wanted in the current situation. To this end, the physician can approach the patient's representative for advice – family and those closest to the patient possibly involving consultations with other members – concerning possible interpretations of the patient's wishes.

Advance directives serve an important role as guidelines in decisions on actions that need to be taken on behalf of a patient with dementia. If a patient wishes to draw up an advance directive, then it is the responsibility of his doctors – particularly his own GP – to discuss this at length with the patient in order to avoid misunderstandings and problems of interpretation. If a patient has a severe debilitating disorder, then the physician will usually ask about the patient’s wishes concerning treatment and, if appropriate, will point out to the patient the option of drawing up an advance directive (AAN96, CAL97, Haa00, Her96, Sch00c).

Dementia is difficult in this regard, since the options for taking radical decisions on matters such as the refusal of treatment or a request for euthanasia (8.4) are very limited once dementia has been diagnosed. Only those patients whose dementia is diagnosed at an early stage will still be capable of this (Mar99). Problems of interpretation can be largely avoided through detailed consultation with the GP. Anyone wishing to draw up an advance directive, in case he should become demented, is advised to get in touch with his GP in good time, well before he shows any signs of dementia. Those who have drawn up an advance directive would be well advised to update it at regular intervals, in consultation with their GP.

There is not much demand for written advance directives (Sch00c). This is partly because few are aware of the option, and presumably partly because people either do not feel the need to anticipate the future or are afraid of it. In this respect, the taboo surrounding death is presumably an impediment to the drafting of a written document specifying one’s wishes with regard to medical treatment in the event that one becomes demented. In practice, some people are even afraid that they will bring about certain situations simply by writing about them in detail. The Committee feels that the authorities would be well advised to inform citizens about the importance of drawing up advance directives and about the opportunities that exist for doing so.

8.4 Decisions associated with the end of life

Dementia is a progressive disease, which is inevitably terminal. The Committee will now consider the options available to those involved (patient, representative and other close friends and relatives, carers and therapists) for influencing the moment of death.

8.4.1 Decisions to refrain from, or suspend, treatment

Optimising well-being and quality of life are central pillars of medical management. In the later phases of dementia, policy focuses on pain reduction, limitation of comorbidity (cardiovascular disease and diabetes), treatment of intercurrent disorders (such as bladder infection, pneumonia) and the reduction of complications and symptoms that are associated with dementia. While this approach is not primarily aimed at extending the patient’s life, this is nevertheless the usual result of such treatment. There may come a time, however, when extending the patient’s life is considered to be pointless and undesirable. Nursing home physicians consult with the family during the last stage of life, usually to decide between two possible forms of policy with regard to complications and associated disorders. The first of these options is ‘palliative’; the second is ‘curative’. The distinction between these two options lies in people’s frequently unspoken thoughts regarding the possibility of extending the patient’s life, as an intentional or unintentional consequence of the selected policy. There are many expressions for these two forms in use, some of which partially overlap one another. It would therefore be useful at this point to clarify this distinction by the use of some examples.

When a curative policy is adopted, one attempts to cure the patient of his pneumonia by means of an antibiotic. A palliative policy, on the other hand, involves combating tightness of the chest, anxiety, pain and discomfort by the use of morphine or anxiolytic medication. Similar measures are taken in association with eating and drinking problems. The temporary, artificial administration of fluid can be part of a curative policy, for example when there is a risk of dehydration as a result of a perfectly treatable infection or other complication. If the decision has been taken to pursue a palliative policy, no attempt will be made to administer fluids artificially if the patient refuses to drink or is unable to do so. Instead, the patient’s mouth will be regularly moistened in an attempt to reduce any possible discomfort resulting from this.

In the international literature on the terminal care of dementia patients, it is by no means generally accepted that medical policy should be decided on the basis of the weight that is attached to extending the patient’s life. The term ‘comfort care’ or ‘hospice care’ is sometimes used for policies that would be described as ‘palliative’ in the Netherlands. The distinction between palliative and curative medical care produces clarity in discussions about decisions related to the end of life and in day-to-day practice.

Pointless medical treatment

The question of whether further medical treatment has any point arises when drip feeding, the administration of antibiotics or hospital admission are being considered in order to treat life-threatening diseases, or to prevent dehydration and starvation in patients who are in a far advanced stage of dementia. In situations such as this, the general course of action with regard to decisions about treatment applies in full (8.3.3). Its central pillars are the opinion of the attending physician (which is the basic starting point of all medical professionals) and the patient’s will (or presumed will). As mentioned above, if the patient has drawn up a negative advance directive in this connection then it is the physician’s duty to implement it.

One particular consideration that influences the physician’s opinion is whether the intervention in question will lead to a meaningful end to life or to a pointless extension of dying. In the latter case, the medical action in question must be adjudged pointless. In reaching such an opinion, two criteria are of decisive importance: the effectiveness and the proportionality of the treatment. Effectiveness has to do with the extent to which the action contributes to the solution of the medical problem. This is not just a question of the therapy's efficacy in general; it is also a matter of its expected effectiveness for the patient in question. The probable prognosis for the individual patient is a factor of major importance here. If, for example, it has been repeatedly shown that courses of antibiotics provide only temporary relief in cases of pneumonia, then a further course of treatment will have little effect. This certainly applies if the patient's general condition has deteriorated, a situation that is inherent to the final stages of dementia. The aim of proportionality is to achieve a reasonable balance between pros and cons of a given treatment. If the goal is not proportional to the burden being imposed on this specific patient, the intervention is pointless. Some also cite a failure to reach a 'minimum level' as a separate criterion for medically pointless actions (Lee00, page 358). Strictly speaking, this is contained within the criteria of effectiveness and proportionality, because it is not possible to reach a verdict in this matter without considering whether continuation of the patient's condition prior to the occurrence of the disorder in question is a justified treatment goal. Nobody can deny that a verdict about medically pointless actions is often not free from value judgements. However, it is essential that such a verdict is medically determined and that it can be tested against the standards of the medical profession (CAL97, Lee00). In such cases, physicians would be well advised to consult an appropriate medical specialist before reaching a verdict.

Although a physician may refrain from certain interventions because he considers them medically pointless, this does not relieve him of the obligation to inform all of the parties involved. If the physician considers switching to a palliative policy, he should inform the representative of this decision. He should also involve the representative, within the limits appropriate to the medical profession, in the final decision. The death of a patient is also the death of a loved one, a much-loved family member or a person with whom one has had some other relationship. In this sense, it is not a strictly medical affair. The physician will openly discuss his thoughts with the patient's representative and other involved parties (family and carers), regarding the content and probable result of the policy that he has in mind. He will also make every effort to be receptive to the views of these individuals. This places considerable demands on the communications skills of (nursing home) physicians. It can also be very time consuming, simply because the family needs to get used to the idea that the end is actually near. Very rarely, in practice, physicians briefly suspend the verdict that an action is pointless for non-medical reasons associated with the need to provide adequate terminal care and start or continue treatment. This can occur, for example, if the physician wants to give the patient's close friends and family the opportunity to reconcile themselves to the patient's approaching death. This decision can be justified, provided that it does not go against the interests of the patient.

Even if the decision-making process does not always go smoothly, the Committee nevertheless has the impressions that, in practice, decisions to refrain from further treatment are generally arrived at by mutual agreement. The fact that problems are sometimes encountered is inherent to the situation, since this is a highly emotional time for all those involved. In this regard, withholding fluids and food from a demented patient in the terminal phase of the disease is difficult for the family. Not too long ago, this approach caused a great deal of controversy. Without going into the details of these discussions, the Committee has found that there are increasing indications that withholding fluids and food, while providing good care, results in a peaceful death. There is a trend of exercising caution with regard to the artificial administration of fluids and food to demented patients who have lost the ability to eat or drink, or who refuse to do so (Cho00, Fin99, Gil00, Old99, NVVA97, Pos01). Eating and drinking have a symbolic value. Helping the patient to eat or drink is the only way for family members to express their affection for him, which gives the decision to withhold food and drink an extra emotional charge. Timely and clear explanations of the anticipated consequences can prevent misunderstandings.

The reverse can also occur, namely that the family insists that all attempts at treatment must cease, while the physician is not convinced that such a policy can be medically justified. In such cases, the family's view is generally that the situation is humiliating or that the patient would never have wanted that. However understandable these feelings may be, they apply to the family and not to the patient. Family members do not have the right to decide whether or not the treatment is pointless (GR91, Lee00). It is the physician's duty to explain this to them.

8.4.2 Termination of life by request and assisted suicide

Some people are so fearful of the spectre of dementia that they opt for death rather than for life with dementia. In the event that they were to become demented, they would prefer to decide when to die, if necessary by means of a written advance directive.

The Termination of Life on Request and Assistance with Suicide Act (the 'Euthanasia Law') stipulates that the termination of life by request is not punishable if the physician carries this out with due regard for certain requirements concerning due care (article 20). One important requirement is that the physician ascertains that the case involves hopeless and unbearable suffering (article 2 paragraph 1b), which - according to the memorandum of clarification – in certain cases could be taken to include humiliation of the individual.

It is a recognised fact that the termination of life, in cases of dementia, is a complex subject. Such a wish may be based on a variety of motives that are partially linked to one another. Before addressing the Act's applicability to dementia, the Committee would like to try to disentangle these various motives. This is not based on an assumption that the Committee can provide definitive answers, but on a wish to contribute to the debate on this subject.

Hopelessness. Dementia is hopeless in the sense that it is incurable. The patient's mental abilities will unavoidably deteriorate, as will his physical condition, in time. Dementia ultimately leads to death. This is an objective fact. It is indeed the case that bystanders sometimes perceive the situation to be hopeless. The question is whether the patient sees things the same way. Firstly, certain symptoms of dementia - such as depression, agitation, behavioural disturbances and the like - can indeed be eased by the use of appropriate interventions (chapter 7). Secondly, in order to perceive the situation as hopeless, the individual involved must be capable of comparing his current condition with his past condition, and what awaits him in the future. In order to do this, he must have an understanding of his situation, a perception of time and place, and some ability for reflection. In the early stages of dementia, the possibility cannot be excluded that a patient will indeed perceive his situation to be hopeless. This is not the case for many patients, however. In cases of dementia, disease recognition is often limited or entirely lacking, and such individuals soon lose the ability to orient themselves in time (2.3.1). As the disease advances, it becomes even more unlikely that the patient will be capable of feelings of hopelessness. It is virtually certain that this ability will entirely disappear, in time.

Unbearable suffering. Suffering is a subjective matter, but expressions of suffering can be objectively determined. In the early stages of their disease, some patients are aware of their mental deterioration. Very few are able to associate their condition with their disease, and to reach the conclusion that this situation is irreversible (2.3.1). The prospect of further deterioration and the lack of a future may cause them to experience feelings of sadness and rebelliousness. It can also give rise to great anxiety and to depression so extreme that treatment with antidepressants, possibly in combination with psychotherapy, may be indicated. Their suffering usually derives from the fact that they are aware of the course of the disease and of the fact that it cannot be influenced. They see this as unacceptable. It is conceivable that, during moments of clarity, they will express the wish to die. That comprehension will not always be there; it will surface from time to time and will, almost certainly, eventually disappear completely.

This does not detract from the fact that even if patients are no longer able to perceive their demented state as such, they will still be able to experience sadness, anxiety, hunger, thirst, pain, tightness of the chest and the like, and to communicate this to others. In other words, they can experience extreme suffering because of associated disorders.

Humiliation. Whether or not someone sees dementia as humiliating is largely dependent on his personal system of values. This will differ from person to person.

At one end of the spectrum, there are people who place great value on the ability to control their own lives. The abilities that underpin such control (rationality, autonomy and independence) are lost in the course of dementia. Since these individuals consider such abilities to be a fundamental part of their personality, they will be inclined to see their dementia as an unacceptable humiliation, and as a reason to actively terminate their life. The main motive for their desire to die is not so much a fear of what is to come, but more a conviction that they must remain true to who they are. They see the personality disintegration that is associated with dementia as being unacceptable for themselves, primarily due to the impossibility of retaining even a shred of self- perception (Har99b). This may involve the conviction that their life would be worthless if their personality were to undergo drastic changes. Alternatively, they might wish others to remember them as they were, and not as they will be after their personality has disintegrated. Others see the progressive dependence that is unavoidably associated with dementia as a reason for considering the demented state to be an unacceptable humiliation.

At the other end of the spectrum are individuals who do not consider life with dementia to be necessarily humiliating, however unpleasant they may find the prospect of becoming demented. These individuals also view the breakdown of the original personality as an enormous loss, but they accept it as a part of life, and in this sense, also as a part of the individuals who are affected by dementia, including themselves. Active termination of life is not appropriate for those who take this view.

Many people's views about whether dementia is or is not humiliating fall between these two extremes. They may, for example, find certain aspects of the disease humiliating, such as not being able to recognize their partner or children, becoming incontinent or losing a sense of decorum. If they want to die in the event that they should become demented, then this wish will have to be carefully worded, making it subject to various conditions.

The debate about whether or not dementia is humiliating is inevitably coloured by the quality of care provided. It is therefore necessary to make a clear distinction between the state of dementia sufferers as such, and the condition in which they may find themselves if the quality of care is less than ideal.

Nuisance. The consequences of dementia are quite drastic for family members and those closest to the patient. Some people would rather die than be a burden to others as a result of the consequences of their disease. They don't want to saddle them with the practical burdens that arise from loss of independence, or with the emotions and feelings of humiliation generated by the deterioration of mental abilities and the loss of the original personality.

The motive of not wishing to be a nuisance is highly subjective, which makes it difficult to test. However, testing is certainly a precondition if this is to be considered as one element in a patient's wish to die. It is also important to distinguish between current feelings of being a burden to others in the early stages of the disease, and anxiety concerning the possibility of being a burden in future. The possibility cannot be excluded that, in the early stages of the disease, the patient himself feels that he is being a nuisance to others. This will not happen very often, since the ability to reason in this way has generally been lost by the time that the diagnosis is made.

Application of the Termination of Life on Request and Assistance with Suicide (Review Procedures) Act

In the case of dementia, two situations can be identified in which a request for the termination of life or for assistance with suicide would be appropriate. The first is the situation that, in the initial phase of dementia, a legally competent patient asks his doctor for assistance with suicide. The second is that a patient, before becoming legally incompetent, drafted a written advance directive, the tenor of which is that he would like his life to be terminated in the event that he is in an advanced phase of dementia.

Assisted suicide for patients in the initial phase of dementia

As mentioned above, someone in the initial phase of dementia might ask his doctor for assistance with suicide (or for termination of life, as the case may be), out of fear of the disease or because he finds the prospect of a future with dementia unacceptable. It is appropriate to make certain remarks at this point.

Currently, a diagnosis of 'dementia' can only be made with any certainty if the patient exhibits clear cognitive and non-cognitive disorders (CBO97, NHG98). Only in very rare cases where the diagnosis is virtually certain will the patient's decision-making abilities enable him to decide about something as drastic as terminating his life. In practise, such requests are seldom, if ever, made (CAL97, together with the experiences of the members of the Committee). This is probably because the diagnosis is made at quite a late stage, by which time the patient has little or no understanding of his disease (2.3.1). Requests for assisted suicide in the initial phase of the dementing process cannot be excluded (Mee99), but for the time being these are the exception rather than the rule.

There might be an increase number of requests for assisted suicide from patients who consider a life with dementia as humiliating and unacceptable, if it were possible to diagnose dementia with more certainty at an earlier stage (5.1.6 and 5.3.1). One important question is whether such suffering can be characterised as unbearable and hopeless, within the meaning of the euthanasia law. While this law was being debated in Parliament, the Minister of Health, Welfare and Sport repeatedly emphasised that the issue of whether unbearable and hopeless suffering is involved required a medical verdict that physicians must reach on a case-by-case basis (EK01a, EK01b, TK00a, TK00b, TK00c). The standpoint that patients in the initial phase of dementia experience unbearable suffering is, in the Committee's view, generally incorrect. The Committee does not exclude the possibility that assisted suicide could be within the terms of the law in individual cases.

In the case of dementia, the desire to die is not generally expressed out of a fear of suffering but because patients reject a state, in which the deterioration of the personality is unavoidable. Personality disintegration, or the risk thereof, can be associated with severe suffering, although this is not necessarily the case. According to the current wording, someone's wish to maintain control of their own life is not, of itself, a strong enough argument for termination of life by a physician or for being assisted by a physician to commit suicide (EK01a, EK01b). Since the wish to retain control of one's own life is an important issue for a section of the population (especially in the case of dementia), further social debate on this topic is essential.

There are strong arguments against the motive of not wanting to be a nuisance to others, as a prime reason for wishing to die. This is because these 'others' are adult individuals who are considered to be capable of deciding where their limits lie. Furthermore, acceptance of this motive as a valid reason for the termination of life could create an opportunity for subtle or less subtle pressure to be exerted on the patient, either by those closest to him or by society in general, to opt for active termination of life. The Committee points out that, in the case of dementia, the desire not to be a burden is unavoidably part of the background to all expressions of a desire to die. Its resonance is always present. The Committee takes the view that, in cases of dementia, not wanting to be a nuisance is inadequate as an independent reason for requesting termination of life.

Termination of life in advanced dementia on the basis of an advance directive

The first question is what circumstances did the patient have in mind when he drafted the directive. Even very carefully drafted, highly detailed instructions concerning the desired moment of death require both interpretation and an answer to the question of whether the stated conditions have been sufficiently satisfied (see 8.3.3). This is difficult but not impossible. Even when the physician, in consultation with the patient's representative, has determined that the moment described in the advance directive has arrived then, in accordance with article 2 paragraph 2, regardless of the existence of an advance directive, he is required to comply with the statutory requirements of due care (article 2 paragraph 1). This implies that, among other things, he should be convinced that the patient is experiencing hopeless and unbearable suffering (article 2 paragraph 1b). As previously described, in the later stages of their dementia, patients are unlikely to be capable of viewing their demented status as hopeless, unbearable and humiliating. They do not generally give such an impression. Unless the patient is experiencing considerable suffering from symptoms arising from associated disorders, the physician will not usually be convinced that the patient is experiencing hopeless and unbearable suffering. As a result, the patient's situation will not comply with the requirement of due care. Nevertheless, some people draft advance directives (or wish to do so) stating that they do not want to go on living if they are in the final stage of dementia, even if they are not suffering from severe associated disorders. The Committee feels that a wide-ranging debate should be held on what is possible and what is not possible with regard to the termination of life in this situation.

The Committee has concluded that, in accordance with current statutes, dementia alone is insufficient basis for the termination of life or for a request for assisted suicide. That conclusion is in line with the views expressed by the KNMG (Royal Netherlands Society for the Advancement of Medicine) and the NVVA (Dutch Association of Nursing Home Medical Practitioners) on this topic (CAL97, NVVA97). Those who are unwilling to accept their own dementia and who record their wish to die in the form of an advance directive should be aware that the options for implementing their will are limited, since physicians must observe the requirement to exercise due care. This is unsatisfactory for those who want to exert an influence on affairs associated with the end of their life. In the Committee's view, it is essential that the social debate about termination of life in cases of dementia be continued.

Chapter 9

Dementia in society

The number of dementia sufferers will increase dramatically in the next few years. This has major implications for society. As their disease progresses, dementia sufferers become unable to care for themselves. They are dependent on others: family, neighbours, friends and professional carers. The vast majority of elderly people suffering from dementia will ultimately become entirely dependent on professional care. In this chapter, the Committee addresses elements that are of importance to the future organisation of care. The Committee also gives consideration to society’s image of dementia, which essentially dictates the way in which society deals with an extremely vulnerable group of people.

9.1 Dementia in figures

The present ageing population is a result of the post-war ‘baby boom’. Together with an increasing average life span, this will have a major impact on society. This issue has been examined in detail by various recent publications (including SER99, WRR99, SCP01). Since dementia is a disease of the elderly, the ageing of the population will result in a large increase in the number of dementia sufferers.

9.1.1 Number of patients

The exact number of dementia sufferers is not known, since there is no systematic registration of this disease. However, it is possible to make a good estimate on the basis of age-specific prevalence figures and population prognoses. The most reliable prevalence figures for the Netherlands come from a large-scale ERGO study that was carried out on the population of Rotterdam during the 1990s (Ott96a). These figures are consistent with results obtained elsewhere in Europe (Fra00a, Lau00a, Lob00). With the aid of these prevalence figures and the middle variant of the CBS (Statistics Netherlands) population prognosis (CBS00), the Committee has prepared estimates of the numbers of patients aged 65 and above. According to this calculation, in the year 2000 they numbered approximately 170 000. In 2010 this is expected to rise to well over 207 000, an average increase of 3 700 per annum. This rise will progress at about the same rate until 2020, when there will be about 246 000 elderly dementia sufferers, followed by a rapid increase to well over 355 000 in 2030. In that period, the average increase will be well over 7 000 cases per annum. This number will continue to increase after 2030, although at a more moderate rate. In 2050, it is anticipated that 412,000 people aged 65 and above will be suffering from dementia (figure 9.1, Annex D1). Although they will still be in the minority, the proportion of men will increase slightly. In the year 2000 29 percent of sufferers were men, in 2010 that will be 32 percent and in 2050 it is anticipated that the proportion of male patients will have risen to 38 percent (Annex D2).

There will be a much greater proportional increase in the number of people with dementia. Increasing numbers of people will have a dementia sufferer in their circle of acquaintances. Whereas in the year 2000 it was estimated that 1 in 93 people in the Netherlands was demented, this figure will be 1 in 81 in 2010, 1 in 71 in 2020 and 1 in 44 in 2050 (Annex D3).

9.1.2 *Factors that can influence the number of patients*

The prognosis is based on the assumption that age-specific prevalence remains the same. The possibility of cohort effects cannot be excluded, since living conditions and other environmental factors for those who will soon be joining the ranks of the elderly (the post-war generation) differed from those who were elderly in the 1990s. However, no such effects have yet been reported in the literature. Nothing can be said about the direction of possible changes in prevalence as a result of such effects.

The number could be less than predicted if science finds a way of postponing the moment at which dementia manifests itself. The possibility of new preventative measures against AD, and vascular dementia will probably have little effect in the next decade, or two, since the brain anomalies caused by these diseases develop many years before dementia manifests itself.

Of course, this prognosis will be rendered meaningless if it becomes possible to cure dementia by medication or some other means.

For the sake of completeness, it should be pointed out that the prognosis concerning the extent and composition of the population is also subject to uncertainties (Ald99, Bee99, Jon01a).

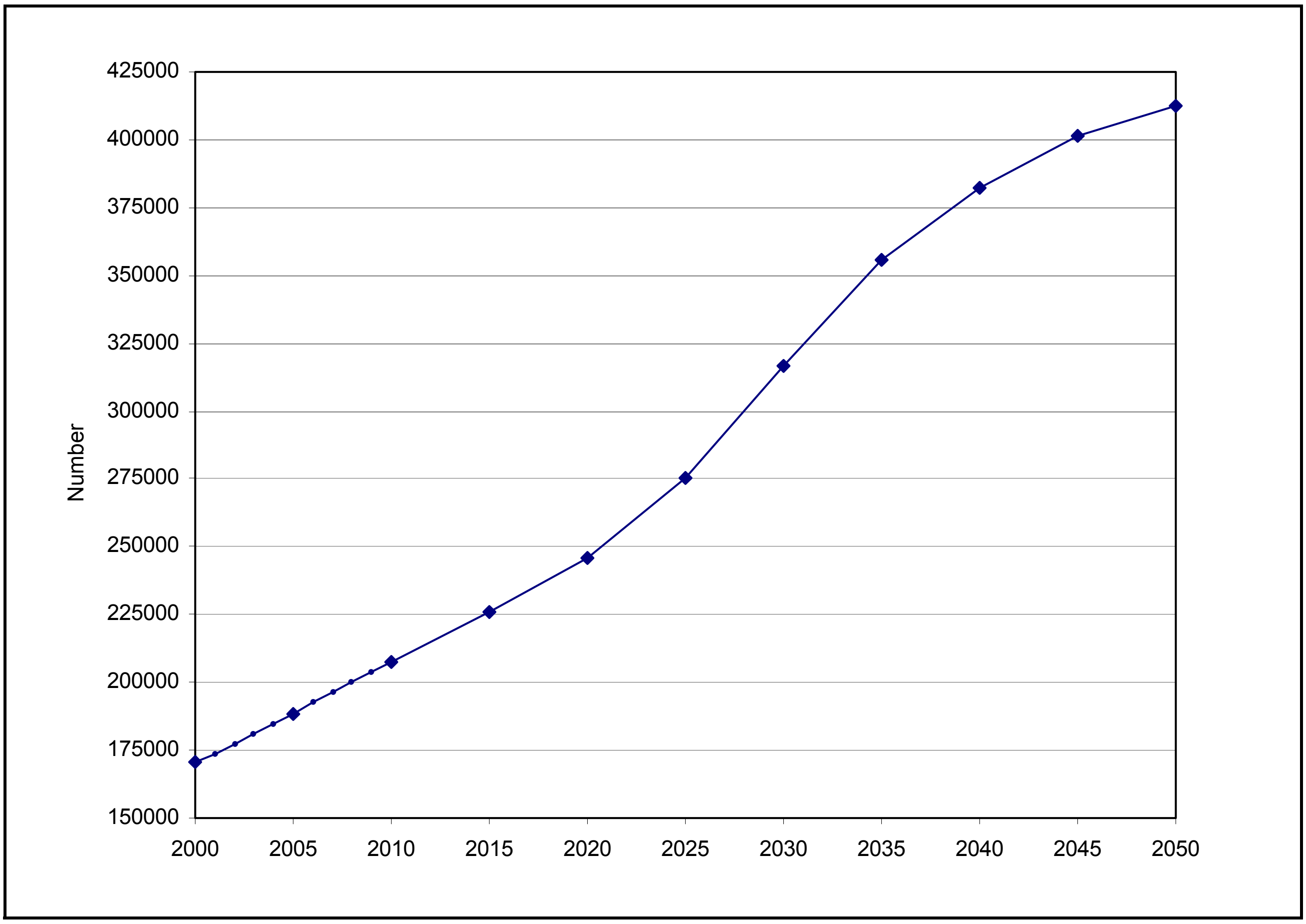

Figure 9.1 Estimate of the number of dementia sufferers aged 65 and above in the period 2000 - 2050.

9.1.3 *The scope of care*

It is estimated that, among elderly people, about half of all dependence on care can be ascribed to dementia (MRC99, Agü98a, Ber00d). The care provided to dementia patients consists of formal and informal elements. Informal care is the care that is provided on a voluntary, unpaid basis. This includes care provided by individuals within the patient's existing network of family, friends, neighbours and others known to the patient as well as voluntary work: unpaid work carried out by individuals who are not part of this network. Formal care is the care provided by paid professionals. Another important distinction in terms of care is the matter of where the patient lives, i.e. at home or in an institution.

Home

Two thirds of dementia sufferers live at home and are largely dependent on informal care. This care is mainly provided by partners, daughters and daughters-in-law, and sometimes by other members of the family or others known to the patient (Cuij97, see also following paragraph). In this context, the assistance provided by volunteers is extremely important, especially when it comes to taking on duties such as keeping the patient company and supervising him, thereby giving the informal carer an opportunity to relax or to attend to personal matters of their own. There is also formal care, such as home care, day care and respite care. Formal care is generally provided for no more than a couple of mornings or afternoons each week.

As the disease process advances, patients become still more dependent on others, even for the simplest day-to-day things. Almost without exception, they eventually require round the clock guidance, or company at the very least. This is something that standard home care cannot provide. While it is also possible to purchase care from private care institutions, most people cannot afford this. Thus, in terms of its nature and scope, informal care is a crucial part of the care provided to dementia sufferers who live at home. At the national level, there is no data concerning the scope and nature of the care received by dementia sufferers living at home.

Institutions

In many cases, there comes a time when living at home is neither possible nor sensible. If and when that moment arrives is partly dependent on the way in which the disease manifests itself and on its course. Other factors include the occurrence of comorbidity, the availability of professional help and the ability of carers at home to cope. There is very little data concerning the care provided to dementia patients in institutions. The figures shown below represent the best possible current estimates.

Nursing homes. On 1 January 2000, 30 813 patients were occupying beds in psychogeriatric nursing homes. In 84.5 percent of these patients, dementia was the main disability-determining diagnosis (Pri01)*. It is estimated that, upon admission, a further five to ten percent of psychogeriatric patients had some other form of disability-

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* Nursing home care in so-called substitution projects (approximately two percent of total nursing home care) has been excluded from consideration. This type of care for dementia patients is only available on a very limited scale.

determining diagnosis (such as depression, Parkinson's disease, psychosis) in addition to dementia (dementia as second or third diagnosis)*. Considering this, a conservative estimate of the number of dementia patients is 90 percent of 30 813, which amounts to 27 732.

In addition, a far from negligible number of dementia sufferers reside in a somatic nursing home or in the somatic ward of a combined nursing home. On 1 January 2000, there were 25 855 'somatic' beds in nursing homes. Informed sources are reasonably certain that dementia sufferers occupy at least 10 percent of those beds. The actual percentage is presumably higher, possibly much higher. This therefore involves at least 2 586 beds.

It is estimated that on 1 January 2000 patients with dementia were using at least 30 318 nursing home beds. This means that, at that moment, 17.8 percent of dementia sufferers resided in nursing homes.

Residential care homes. Elderly people are both able and willing to continue living in their own house for as long as possible. There are now far more opportunities for them to do so (home care, social care provision). In 1986 there were well over 136 000 places in residential care homes, by 1998 this had fallen to nearly 108 000. Since then the number has increased somewhat, in the year 2000 there were 114 000 places available**.

Residential care homes were initially intended for healthy elderly people, not for patients. The institutions are gradually evolving into homes for people who require a considerable amount of care, and sometimes also nursing care. One consequence of the original organisation of these institutions is that while they maintain a national register of the weight of care, there is no tradition of systematically recording the residents' state of health. In recent years, the amount of care required by the inhabitants of residential care homes has gradually increased. Studies in the Gelderland region (carried out in 1999) showed that 13 percent of the residents were suffering from psychological problems of such severity that they required constant guidance. Twenty one percent of the residents had moderate psychological problems that were reasonably manageable but which necessitated additional guidance (Kre00). It is not known what proportion of residents is suffering from dementia. This can be assumed to be around 75 to 90 percent. If the figure of 75 percent is used as a working hypothesis, and if the figures for Gelderland are typical of the Netherlands as a whole, then it is estimated that in the year 2000 at least 29 070 places in residential care homes were occupied by dementia sufferers. This is equal to 17.1 percent of all dementia patients.

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* Prismant, verbal communication.

** Arcares, verbal communication

According to the conservative estimate given above, on 1 January 2000 almost 35 percent of all dementia patients lived in a nursing home or residential care home. This corresponds to a 1997 estimate, which put this figure at one third of all such patients (Cuij97). In spite of the numerous uncertainties in these calculations, the Committee is convinced that the figures are of the right order of magnitude, and that if anything they are probably on the conservative side.

Projecting these figures into the future shows that, if the present admission policy is maintained, in 2010, institutions will require 12 900 more places for dementia patients aged 65 and above. This represents an average annual increase in capacity of 660 nursing home beds and 630 residential care home places (Annex D4). If the number of places in these institutions were to remain the same, then the percentage of such patients for whom a place is available will fall from 35 to 28.5.

9.2 Current quality of care

The system of care provision lies at the very edge of the domain covered by Health Council recommendations. The Council for Health and Social Service (RVZ) regularly produces reports relating to the organisation of care and to the care provision facilities for dementia sufferers (see, for example, NRV95, RVZ96, RVZ97, RVZ98a, RVZ98b, RVZ98c). The Committee nevertheless takes the view that it cannot pass over this subject entirely. In the light of its practical experience, it urges that consideration be given to several organisational issues related to the quality of care.

The availability, coherence and continuity of formal care facilities and informal care provision are essential preconditions to the quality of care for dementia patients who live at home, or who want to continue to do so. The Committee feels that it is these conditions, even more so than support for informal care in the strictest sense of the term (7.5), that determine whether informal carers are able to continue to care for a demented close friend or relative without being harmed, or being extremely self-sacrificing. In addition, it is important that the individual needs assessment for the admission of patients who, for whatever reason, can no longer remain at home, should take place in a just and uniform way. There must also be testable criteria for measuring the quality of care in institutions, and for amending it as necessary.

Informal care. Referral to support programs does not usually take place until it becomes clear that the carer is becoming overburdened. This is much too late, however. It is important to alert the target group to the existence of such help immediately after the diagnosis has been made.

Tailored care. In order to give meaning to ‘tailored care’ (the basic principle of current policy), the care, treatment and counselling that dementia patients and their carers need on the basis of a sound needs assessment must actually be deliverable right when it is required. There are still waiting lists for home care, day treatment and admission to an institution. This tends to undermine the health of informal carers (Mei01). Although the government has made great efforts to eliminate waiting lists completely, some regions still have unacceptably long waiting lists.

Continuity of care. Dementia patients require various types of care, treatment and counselling, delivered either simultaneously or in sequence. Many informal and professional carers, as well as various organisations, are involved in this. These include informal carers, volunteers, GPs, psychiatrists, neurologists, psychologists, social psychiatric nurses, memory clinics, psychogeriatric teams, home care, mental health institutions, residential care homes and nursing homes. Integration and coherence are needed for good quality care, yet they have not been adequately implemented. The nature and scope of collaboration between GPs, mental health institutions, home care, residential care homes, nursing homes, general hospitals and memory clinics vary from region to region, while collaboration and alignment with informal carers is often inadequate.

The organisation of the multidisciplinary psychogeriatric teams, which are intended to promote integration and coherence, shows similar variation. Some place the emphasis on diagnosis, while others focus on counselling patients and on coordinating care. Few teams address both facets. A similar situation applies in the memory clinics. They owe their existence to the personal interest shown by individuals from a wide range of disciplines (neurology, psychology, geriatrics and, to a lesser extent, psychiatry). There is, almost without exception, little structured collaboration with regional facilities for the care of the elderly.

In some regions, but by no means everywhere, a coherent package of facilities for dementia sufferers is developed, by forming multidisciplinary teams in which pathological and care-oriented elements are combined. The aim is to achieve collective responsibility, which means that individuals no longer attempt to shift the responsibility onto others, as is currently the case. It is not simply a matter of explaining the notion of collective responsibility to informal carers; they must also participate in it.

Case management. It is important that someone should monitor all of the ups and downs experienced by the patient and his carer. It is that individual’s responsibility to check that the various forms of care and treatment are geared to one another, and that they genuinely meet the needs of the patient and his carer. Very few patients and carers are capable of finding the best route through the chaotic mass of care facilities. Specially trained case managers have been appointed in some places. GPs sometimes fulfil this role. Case management is often completely absent.

Crisis care. In many places, the provision of care in crisis situations is a problem. Some nursing homes have 'emergency beds', but these are often already occupied. The options are particularly limited outside office hours. Although accessible, GPs and mental health institutions can only offer marginal assistance at such times. In cases of acute care crises the only solution is often an – unwelcome – admission to hospital. All too often even that is not possible.

Admission to hospital. If a GP considers that a dementia sufferer needs to be admitted to hospital, he is often asked to give a guarantee that the patient will return home after his stay in hospital. This is an unreasonable demand. On the other hand, hospitals often get into difficulties because suitable care is not available for dementia sufferers who no longer need to remain in hospital. Out of sheer necessity, such patients then remain in hospital. As a result of the lack of capacity in nursing homes and residential care homes, this 'blocked bed situation' can last for many months.

Honing expertise. Providing training for carers in home care, nursing homes and residential care homes, and honing their expertise are preconditions for the adequate provision of care. Some mental health institutions see this as their task; others do not. Here too, there is considerable regional variation.

RIOs. The Dutch regional care allocation authorities (RIOs) carry out independent, objective and integrated testing of day treatment, nursing home admission and the like. The RIOs vary in terms of procedures and composition. There are no specific decision rules for individual needs assessment with regard to elderly dementia sufferers and their carers. RIOs, in which medical disciplines participate, tend to repeat the diagnostic procedures, instead of limiting themselves to the testing of preconditions. Furthermore, regions with undercapacity tend to base their assessment of needs on scarcity, which is hardly the aim.

Care in institutions. Residential care homes and nursing homes have far too few places available for dementia sufferers. In certain regions there is a drastic shortage of trained, professional carers. The media regularly contain reports concerning the poor quality of care. There is international concern regarding the quality of care for dementia patients in institutions. Recently published systematic research in the United States, the United Kingdom and Australia invariably shows that the quality and availability of institutional care is substandard. According to some sources, the system is in crisis. All authors endorse the view that it is our moral duty to see to it that adequate facilities are available for dementia suffers (Bal01a, Bos01, Bra01a, Har01, Ker01, Mar01b).

9.3 Care in the future

9.3.1 *Improvement in the quality of care*

The Committee has found that there are considerable differences in the way that formal care for dementia sufferers is provided. The most important areas for improvement are collaboration and the exchange of knowledge and practical experience. This not only relates to the actual care provided, it also covers the organisation and management of the entire sector. At the same time, the Committee is aware that it will be extremely difficult to achieve such improvements in practice. The reasons for this are quite apparent. Competition and rivalry – elements that are an inherent part of market forces – are at odds with collaboration and the exchange of knowledge and practical experience. It is partly for these reasons that national quality requirements have failed to appear. In addition, the Committee concludes that the selection mechanism to be realised through market forces, which was intended to ensure that only those institutions capable of providing top quality care would survive, has not become effective due to enormous shortages of care facilities. This shortage has created an opportunity for substantial differences to develop in the level of care provided, both in and outside the institutions. Benchmarking is a solution currently being considered by the government. It can help to reduce these differences, provided that external standards are used for the minimum level of quality to be achieved. The Committee fears that developments aimed at giving market forces greater play will ultimately prove to be damaging to the quality of care given to one extremely vulnerable group, namely elderly dementia sufferers. The government should remain alert to this possibility.

In order to safeguard the quality of care in the future, the Committee urges that a national care programme for dementia sufferers be drawn up. The wording of this programme should set out its main points, as well as the quality requirements for the organisation of care and guidance. It should also focus on the duties and the positioning of the organisations, institutions and disciplines involved, including GPs. High priority should be given to elaborating the concept of case management, in order to promote the coherence of care. Both professional and informal case managers may well have key roles in this endeavour. A care programme of this type should create a framework within which modifications to the specific situation and requirements the regions can be realised. While a start has already been made on the care programmes' development (Mos99, Sal00a), the marked emphasis on regional organisation and market forces has impeded the momentum of this process.

The Committee recommends that the RIOs' purportedly independent and objective individual needs assessment should be tested. Furthermore, where none are yet present, guidelines should be drawn up containing explicit, testable criteria for the individual needs assessment carried out by these bodies. In addition to focusing on the patient, the focus should also be on the position, function and well-being of the main carer.

The Committee takes the view that efforts to improve both the intrinsic quality of care given to dementia sufferers and the way in which such care is organised will not be effective until care facilities have achieved an adequate volume. To this end, as a matter of urgency, the government must draft measures to drastically expand both home care facilities and the number of places for dementia patients in institutions.

Finally, the Committee emphasises the crucial importance of giving due consideration to those whose task it is to do the actual work involved in providing care: the informal carers and trained personnel working in home care and in the institutions. These subjects are discussed in detail below.

9.3.2 *The position of informal care*

A central pillar of policy for the elderly is the ability to live an independent life. The aim is to reduce the extent of institutional care. This implies a shift away from formal care and towards informal care. This is partly motivated by the fact that elderly people want to remain at home for as long as possible. However, there is also the unspoken thought that informal care is cheaper than formal care. The intended shift means that elderly people in need of care will have to make greater use of informal care. In a memorandum to the Lower House of the Dutch Parliament on the subject of the future of informal care, the government demonstrated its awareness that the only way in which this can be done is to greatly expand the amount of support given to informal carers (TK01).

The Committee feels that it is the responsibility of all care providers to make it clear to informal carers that they should not sacrifice their own lives in the interests of caring for others. They should point out to informal carer that considering their own needs is also in the interests of the patient. From the outset, the carers should be warned about the risk of overburdening and they should be given all necessary information about institutions that can offer them support.

The provision of good quality care to dementia sufferers requires knowledge and practical experience in dealing with dementia patients. It also requires an understanding of the ways in which such patients can achieve the best possible quality of life. While the Committee recognises the possible benefits of programmes for informal carers that are intended to teach them certain skills, it takes the view that such activities cannot replace actual professional help. They also feel that present and future dementia sufferers should be convinced that the content and extent of formal care and support is such that their close friends and relatives will not be overburdened. The exact point at which care for a close friend or relative turns from regular care to overburdening varies from individual to individual.

The Committee thinks that it is worth pursuing the idea of reinforcing informal care. However, it dismisses this as a solution for capacity problems in the formal care of elderly dementia sufferers. Its reasons are:

Specific problems in the case of dementia. While half of all dependence on care among the elderly can be ascribed to dementia (9.1.3), the memorandum concerning informal care passes over dementia-specific problems which make informal care very demanding, and which impose limits on what is feasible and desirable. Firstly, there is the aspect of time. Caring for a close friend or relative with dementia who is living at home is not simply a question of helping out for a few weeks or months. It is often a daily chore that can go on for years. Secondly, dementia differs from other disorders in that it involves the loss of cognitive ability and involves disruptions of emotion and behaviour. There are also indications that the process of shifting the burden of care onto relatives has already been pushed to the limit (Tja99, Bak01b). Exhaustion on the part of the central carer is one of the most common reasons for admitting dementia sufferers to care institutions (Ann00, Dun98, Kan97, Pot97). If the aim is to extend the period for which dementia sufferers are cared for at home, then more intense support for informal care should be combined with a major expansion of home care facilities.

It is important to emphasise that exhaustion on the part of the informal carer is not the only common and legitimate reason for admission. Other such reasons are serious behavioural disturbances, disruption of the sleep-wake rhythm and complete incontinence. It is impossible to deal with the above-mentioned situations at home unless it is converted into a type of nursing home, with 24-hour care. This is not worth pursuing since, aside from the enormous costs involved, it also places an unacceptable burden on the cohabiting partner and on other members of the family.

Availability of informal carers. A great deal of private care is provided by the partner, who is usually of about the same age as the patient. It is anticipated that there will be a dramatic increase in the number of very elderly dementia patients. This means that there is less chance that they will have a partner who does not himself require care or who is capable of dealing with the physical burden involved. There will presumably also be an increase in the number of single people suffering from dementia. In cases where there is no partner, or where none is available, daughters or daughters-in-law generally provide care. There is an increasing probability that one parent (or parent-in-law) will reach a point at which they require care as a result either of dementia or some other condition. In addition, there is increasing geographical distance, women are having children later in life and more of them have jobs (a situation that was actually promoted by the government). All of these factors could reduce the availability of informal carers (Has00, SCP01, WRR99).

Readiness to give and receive informal care. Debates about the organisation of care for the elderly in the future generally involve the unquestioning assumption that there will be no reduction in the readiness of future generations to provide informal care for elderly family members. Another assumption is that future generations of elderly individuals will be equally willing to call upon relatives to provide the care that they need. It is conceivable that people will become less interested in providing informal care to dementia sufferers in particular. The reason is that increasing numbers of people are becoming aware of just how burdensome and long-term the task of caring for such patients can be. For the same reason, serious consideration should be given to the possibility that providing informal carers with training and emotional support will lead to them calling a halt at an earlier stage than would otherwise be the case. While the objective was to postpone institutionalisation, this might have the effect of making it easier for those concerned to take this option (7.5.2). Improving the standards of nursing home care might have a similar effect (Tin00).

There is a marked lack of clarity concerning the place of informal care in the overall provision of care. In day-to-day practice, the impression is often given that it is not the limitations of the patient that determine his claim to formal assistance, but rather the potential of his social network. Even the memorandum on informal care provides little clarity on this point. In this regard, the Committee would like to emphasise the voluntary nature of informal care. When it comes to solidarity and a sense of duty, people's views about where the limits lie tend to vary considerably from person to person. If the members of the patient's immediate family are either unable to take on the task of caring for him or are only able to do so to a limited extent, then they should not feel obliged to do so simply because formal care falls short. The patient should also have a certain amount of freedom to curtail his dependence on close friends and relatives, whatever the reason. Regarding claims to formal care, the limitations of the individual patient must play a decisive part. If the informal carers shoulder part of the burden of care, either out of love for the patient, a sense of duty or for some other reason, then either the patient or his representative may choose to waive all or part of the rights on care facilities.

The Committee anticipates that, in view of common restraints, the shift away from formal care for elderly dementia sufferers and towards informal care will be very limited. They take the view that, in the near future, it will not be possible to provide adequate care for dementia patients without a massive expansion of formal care facilities. The Committee feels that assessments of the need for formal assistance should be based on the demented patient's restrictions and not on the availability of a partner, or close friends and relatives. The Committee considers it important that the authorities define precisely what distinguishes informal care from the normal responsibilities which members of a family and members of society as a whole bear towards each other.

9.3.3 The labour market

There is already a substantial shortfall of personnel (including highly trained personnel) in the care sector, both in home care and in the institutions (see, for example, Mui00). The Committee's area of expertise does not extend to devising readymade solutions for this problem. Some possible avenues might be enhancing the prestige of caring professions (through higher salaries, for example) and making better use of more senior staff by adapting the pressure of work to the age of the individual in question. The following information highlights the urgency of this problem.

From the year 2000 to 2010, the number of 15 to 64-year-olds (the potential working population) will only increase by five percent, while expectations are that the number of elderly dementia sufferers will grow by 21 percent in the same period. In the year 2000 there were 63 potential employees for each dementia sufferer. The prognosis for 2010 indicates that this number will then have fallen to 55. From then on there will be an even steeper decline, until the figure stabilises at around 27 by the year 2045 (figure 9.2). Even if it were possible, reducing the numbers of dementia patients admitted to nursing homes would not resolve the situation, because any such measures would have to be compensated by massive intensification and expansion of jobs in home care and in supporting informal care.

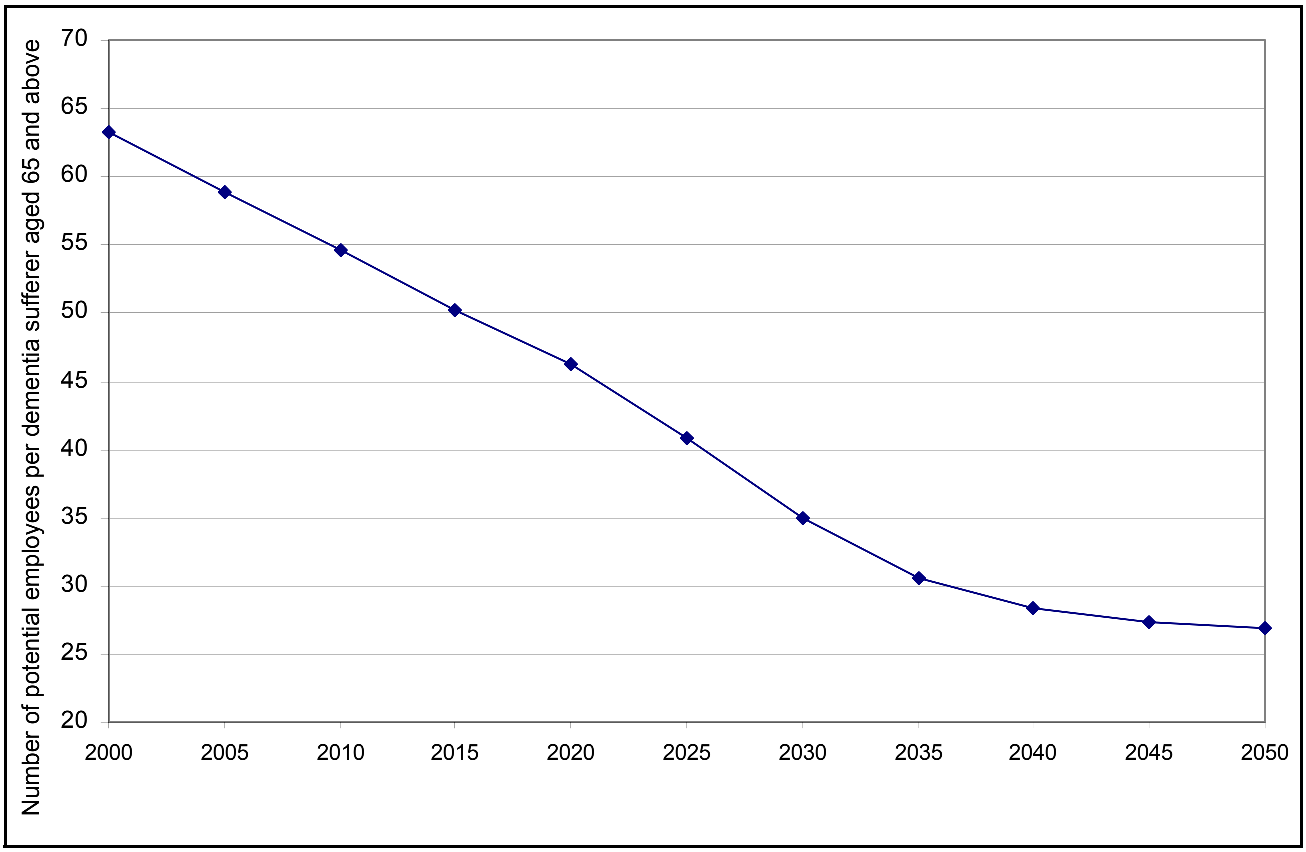

Figure 9.2 Relationship between the size of the potential working population (aged 15 to 64) and the number of dementia sufferers aged 65 and above in the period from 2000 to 2050.

9.3.4 *Small-scale housing*

In the Netherlands, work has started on the establishment of small-scale housing for dementia sufferers, usually linked to a nursing home or residential care home (Ett01). The following is in reply to the minister's question concerning the influence of small-scale housing on the course of the disease and on the quality of life experienced by dementia sufferers.

There is little objective, scientifically valid research data in this field. There is some evidence that while living in small groups (8-12 individuals) cannot prevent cognitive and functional deterioration, the patients remain mobile for longer and the frequency and severity of the behavioural disturbances decrease (Bel98, Bia97, Sax98). This is claimed to be associated with a reduction in the use of psychotropic drugs and in the use of measures to restrict freedom. The support for such conclusions is weak, given the lack of adequate control groups.

Care workers in Sweden have gained a great deal of experience with housing for small groups of dementia patients. The initial view – that this type of, relatively inexpensive, residential care might avoid the need for admission to a nursing home – was not borne out. In the long run it is often necessary to transfer patients to a nursing home, usually because of serious behavioural problems, especially aggression (Wim95, Nor01). The Swedish facilities should be seen as an interim solution between remaining at home and being admitted to a nursing home. In this sense, they are comparable to residential care homes and other related residential care facilities in the Netherlands.

While it has not been possible to demonstrate robust scientific effects in terms of quality of life, there is a good case for the small-scale approach. This is true both of small, separate units and of small units within a larger context (nursing home, residential care home or other type of residential care). Small-scale units give a better overview and promote rest, both of which are important for dementia sufferers, allowing them to retain some degree of control over their environment (7.1.3). Furthermore, if a limited number of permanent carers are linked to small groups of patients, this has the benefit of promoting the individualisation of care. The small-scale approach also offers the opportunity of forming groups of people who are better suited to one another in terms of background, interests or disease stage (DCE98). Importantly, the atmosphere in a small-scale domestic environment provides a better working environment for carers while making the family's suffering more bearable.

9.4 Opinion-shaping within society

Public perception of a disease is the key factor in determining the way in which people who have that disease are treated and the attitude that people will adopt if they themselves develop the disease. People have adverse perceptions about dementia in general and Alzheimer's disease in particular. This is hardly surprising. In the past, the predominating view of the elderly was that they led a secluded life. Nowadays, this has been replaced by the image of the active elderly person, still at the heart of society, enjoying every minute of his spare time, travelling and doing all sorts of enjoyable things. While this may be true of a large group of 'younger elderly' (also referred to as the third phase of life), it is all too easy to project this image as an ideal for all elderly people. In other words, vital elderly people become the standard against which other elderly people are measured (Del99a, Hov98). This leads to a widening of the gulf between elderly people who require care and the rest of society. People currently value cognition, rationality and autonomy more highly than feelings, emotionality and dependence. There is a distinct risk that this tendency will colour the significance of what it means to be human. Without in any way wishing to deny the severity of dementia, the Committee has closely examined certain views about dementia that are related to these values.

Nothing can be done about dementia. The fact that most forms of dementia are incurable is associated with the view that ‘nothing can be done’. The assumption is justified that this idea is not just prevalent among lay people, but that it sometimes affects the dealings of physicians (Eva01, Hou99b, Lot01). This view overlooks the fact that certain forms of dementia can be cured, even if this does not happen very often. More important still is the implicit misunderstanding that certain symptoms of dementia (depression, agitation, behavioural disturbances and the like) can indeed be reduced by selecting the correct type of care, including specific psychosocial and pharmacological interventions. Placing ‘incurable’ and ‘nothing can be done’ on an equal footing reflects a medical-reductionist vision. In past times, ageing was seen as an existential process with both physical and spiritual aspects. These days it is seen as a practical problem to be solved with the aid of science and technology (Del99a, Meu96). When it comes to promoting the well-being of dementia sufferers, however, a strictly medical approach is seldom fruitful (chapter 7).

Demented people are of lesser worth than others. The idea that demented people, especially the severely demented, are of lesser worth could lead to a situation in which they have a more limited moral status and right to protection than other people. Many share this unarticulated view. It affects the way in which they think about dementia and their fear of the disease. There is a huge fear of stigmatisation – that dementia sufferers are designated as being different and of lesser status (Ben00a). The Committee would counter this by asserting that the dignity of dementia sufferers, whatever stage of the disease they are in, is of prime importance. Like anybody else, they deserve the best possible care (Hug00b, Pos00, Tap99).

You cannot communicate with dementia sufferers. The utterances of dementia sufferers are not self-explanatory; they require interpretation. Non-verbal communication is an important aspect of contact with these individuals, but it requires skills that are quite different from those used in verbal communication. Our culture’s emphasis on verbal communication and rationality means that dementia sufferers are marginalized. This can be avoided if those closest to the patient (close friends and family, carers) are aware of this risk and take the trouble to master the skills of non-verbal communication. While communicating with them is difficult, the Committee feels that it is not impossible.

Dementia sufferers are legally incompetent. The view that dementia patients are by definition legally incompetent and incapable of making any decision whatsoever is incorrect. Here also, one should beware of making a one-sided, cognitive-rationalistic interpretation of the concept of competence (8.1.2). Legal incompetence is highly context-dependent. It depends on the nature of the decision and the severity of the dementia (8.1.1).

Dementia is humiliating. As the Committee has previously contended, it depends largely on someone‘s personal set of values whether or not he sees dementia as humiliating. Humiliation, however, is a perception by a non-demented observer who places in a personal context what he believes he is observing when confronted by a dementia sufferer. This mechanism – known as projection – is presumably a major factor in the development of the view that dementia is humiliating. Outsiders have only very restricted access to dementia sufferers’ perceptions of the world around them. Often, they only have indirect clues to guide them. That which outsiders believe they are observing, they project onto themselves. Outsiders tend to see the situation of dementia sufferers as humiliating because of the huge chasm that exists between the patient’s situation and the observer’s current situation. This in no way detracts from the tragedy involved in witnessing the deterioration of a loved one at first hand.

Some people feel that impending humiliation is reason enough to opt for death, rather than to live as a dementia sufferer. It is hardly surprising that the view of dementia as humiliating should take root in our culture, in which autonomy and self-determination are of such pivotal importance. An appreciation of era-based and culture-based values tends to place the general validity of this phenomenon into context. It is important to realise that one’s personal views concerning what constitutes a ‘good life’ determine what one perceives as humiliating. Furthermore, it should not be forgotten that there is enormous individual variation in states of dementia.

Ending up in a nursing home is the worst fate that can befall dementia patients. As a patient’s dementia progresses, informal carers will encounter situations that can easily get out of hand. In such cases, the best solution for both patient and carer is for the patient to be admitted to a nursing home. A society which places great emphasis on personal autonomy and independence has little use for views in which caring for vulnerable, dependent people is regarded as a privilege rather than a necessary evil (Pul99).

The debate about whether or not the state in which dementia sufferers find themselves is humiliating is inevitably coloured by the quality of care provided. Substandard care within institutions disposes the general public to the view that admission to a nursing home is humiliating and must be avoided, whatever the cost. Members of the family often see it as a personal failure when the patient is admitted to a nursing home (Hou99a). It is not inconceivable that the emphasis given to the desirability of postponing admission and its selection as a policy objective will tend to reinforce the view that it is wrong for a demented family member to be admitted (Pos98). The Committee feels that this lets down the dementia patients, the close friends and relatives who care for them and the staff working in the institutions.

Everyone should be aware of the enormous influence that perceptions about dementia have on the way in which society deals with this vulnerable group of elderly people. Whilst there is no cause for optimism with regard to dementia, it is equally misguided to place one-sided emphasis on the negative aspects, both real and imagined. The government should clearly take heed of this when developing and disseminating its policy objectives.

Chapter 10

Final remarks

The main elements of the current situation regarding dementia in the elderly have been set out above. Certain subtle distinctions could, therefore, have been added at some points. In the interests of maintaining a clear overview, the Committee has decided to omit these details. In this chapter, the Committee raises some topics, which it feels are nevertheless worthy of consideration.

10.1 Premature dementia and dementia in mentally handicapped individuals

At an early stage in the preparations for this advisory report, the Committee opted to restrict its scope to individuals aged 65 and above (1.2). As a result, some relatively major groups of patients have been omitted. Almost ten percent of patients are less than 65 years of age. The clinical form of premature dementia and the social and psychological complications involved for patients in the prime of life are clearly very different from the situation affecting elderly people. This group in particular relatively often includes individuals with hereditary forms of AD, an aspect that the Committee has merely considered in passing. It is also becoming clearer that mentally handicapped individuals can often suffer from dementia at an early age. This is especially true of people with Down’s syndrome. The chromosome abnormality that causes this syndrome produces brain abnormalities that strongly resemble those seen in AD.

These groups would clearly benefit from approaches involving diagnosis, care, support and treatment that specifically relate to their situation and disease. Very few facilities can cater to such needs, however.

10.2 Cultural multiformity

The Committee has not followed up the minister's request for information about individuals, from other population groups, who are resident in the Netherlands since there is too little data for the Committee to be able to present a reliable picture of the actual situation. This would require research of a type that does not lie within the Health Council's area of competence. The Committee would nonetheless like to emphasise the importance of this topic. People who are not of Dutch origin can have an entirely different perception of dementia. Furthermore, language barriers can hamper the provision of adequate care. Cultural multiformity is increasing, not just among patients, but also among professional carers working in home care, nursing homes and residential care homes. People's views about what constitutes good care provision are unmistakably coloured by their cultural heritage. Openness about such matters can help to prevent mutual distrust.

10.3 Scientific research

Our understanding of dementia is still very limited. This acknowledgement is a common thread spanning all parts of this advisory report. Scientific progress in this area is very slow. There have certainly been no real scientific breakthroughs that might radically change the situation for patients. A great deal of research is required in all fields. The development of drugs sometimes requires that patients participate in studies that hold out no hope of improving their own situations. One such example would be Phase I trials of potential medications and modes of administration (such as gene therapy) that are unsuitable for testing on healthy volunteers. The Committee by no means wishes to dismiss such non-therapeutic drug research on legally incompetent patients, while stressing that such studies must comply with the conditions and limitations set out in the WMO (see note at 8.2). The Committee points out that, strictly speaking, a recently enacted EU Directive prohibits such research (EU01, Vis01a).

Drug research is largely carried out by the pharmaceutical industry. It is important, in the Committee's view, that the opportunities for independent drug research should be enhanced.

There is a great need for further research in the areas of needs assessment for pharmacotherapy, patients' perceptions of dementia, psychosocial support for patients and informal carers, other non-pharmaceutical interventions and methods of care that are specifically aimed at dementia sufferers. Researchers in these fields are dependent on public resources, the scope of which is very limited in relation to the importance of this type of research.

10.4 Care figures

The Committee found it remarkably difficult to obtain information on which to base estimates of the projected number of dementia patients, and of the nature and content of the care that they will require. There is no systematic recording of the medical indications of patients in home care and in residential care homes. It proved impossible to place the Dutch figures in a European perspective. There is also a lack of readily available figures in other countries regarding the numbers of dementia patients and the care that they need.

The Committee believes that it has succeeded in making reasonably reliable estimates by making deductions on the basis of information that has been combined from a variety of sources. It nevertheless recommends that the actual numbers of dementia patients be properly charted and that the care which they need be identified. In addition, this information should be regularly updated. This is an essential condition for the development of anticipatory policy relating to the care of dementia sufferers.

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A The request for advice

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Annex

A

The request for advice

On June 7 1999, the Health Council received a letter containing a request from the Minister of Health, Welfare and Sport, Dr E Borst-Eilers, to advise her on the matter of Dementia, with special reference to Alzheimer's Disease (letter reference number: GMV 993446).

The text of the request for advice was as follows:

> Dementia is a major cause of severe invalidity in elderly people. A gradual loss of personality, memory and the ability to learn finally produce a state of utter dependence. By far the most important cause of dementia is Alzheimer's disease. In patients with this disease, the dementia is often attended by psychosis, depression, agitation and anxiety.
>
> Alzheimer's disease is incurable. The major elements of treatment are combating symptoms, adequate care and intensive guidance. Research is under way throughout the world into the origins of the disease, in an attempt to find a means of prevention and treatment.
>
> The prevalence of Alzheimer's disease increases dramatically with age. Less than one percent of all 60-year olds suffer from the disease. That prevalence increases to around 40 percent of people aged 85 and above. There will be a marked increase in the numbers of elderly and very elderly people in the population of the Netherlands over the next few decades. This will be reflected in the numbers of patients with Alzheimer's disease. Expectations are that this extremely disabling disease will make still greater demands of informal care and of the health service system.

In this connection, I am requesting a broad overview of the scientific situation with regard to Alzheimer's disease and its significance in terms of the treatment and care of patients with this disease. In particular, I would ask that you include the following themes and queries in your report.

- There is a growing understanding of the genetic factors that are partly responsible for the development of this disease. What is the significance of DNA diagnosis for the patient and those around him, and what would be a sensible way of dealing with this information?
- Can Alzheimer's disease be influenced by behaviour, lifestyle or any other means? In this connection, would early detection of the (susceptibility for the) disease be useful?
- It is no simple matter to make a diagnosis. What is a full diagnosis worth to dementia patients and those around them? What diagnostic methods would be most appropriate? Is any physician capable of diagnosing Alzheimer's disease, or is this a task for specialists – such as those working in memory clinics?
- Large-scale attempts are being made to develop specific drugs for treating patients with Alzheimer's disease. The first of these, the so-called acetylcholinesterase inhibitors, have already been admitted to the market. There is still uncertainty regarding the value of these drugs. In this context, there is some doubt about the clinical relevance of effects found in the available clinical trials. There are also doubts about the selected outcome measures; because these merely deal with sub-functions, rather than with the patient's day-to-day functioning, while the disease affects different domains within the brain, influencing cognition, behaviour and well-being, as well as physical functioning. In addition, the substantial adverse effects involved have given rise to a debate on the balance between efficacy and harmfulness. With a view to the range of new medicines for the treatment of patients with Alzheimer's disease that are expected to become available in the near future, I would ask that you inform me concerning the anticipated place and significance of these drugs. I have a further request to make in connection with the matters concerning measurement and interpretation that were touched on above and which are of prime importance with regard to placement issues. I would like you to determine whether it is possible to formulate general principles and criteria that might be used to determine whether a drug against Alzheimer's disease should be considered effective.
- What opportunities are there for combating the symptoms, aside from the new drugs mentioned above? Is full use being made of these interventions?
- Estimates of the number of patients with Alzheimer's disease vary considerably. I would also like you to provide me with a recent estimate, supported by appropriate data, of the incidence and prevalence of the disease in the coming decades, taking account of demographic developments and preferably distinguishing between the different stages of the disease. I would also like you to investigate what is known in this regard concerning members of other population groups who are resident in the Netherlands.
- What forms of care require patients with Alzheimer's disease, and to what extent are they being utilised? I refer in this connection to informal care, GPs, neurologists, day care, home care, residential care homes, nursing homes, psychological guidance, psychiatric assistance, etc. Are both those seeking assistance and the therapists sufficiently au fait with the details of who they should approach, for what services and at what stage?

- If the situation with regard to prevention and treatment remains unchanged, what consequences will this have for informal care and for the health service system? What factors affect the burdens experienced by the various forms of care, and to what extent? What is the significance of the new drugs in this regard?
- What is known concerning the efficacy of supportive measures (respite care and specific support for informal care)? To what extent can such measures contribute to the postponement, and possible avoidance, of institutionalisation for dementia sufferers? Is full use being made of these options?
- While the largest group of elderly dementia sufferers live at home, they are already a major part of the nursing home population. This is increasingly the case for residential care homes as well. Other options, including a variety of small-scale housing forms are under development. Does housing of this type favourably influence both the course of the disease and patients' quality of life? If so, is this subject to any specific conditions?

Finally, I would request that in drawing up this report you determine whether any special ethic, legal or social issues come into play, such as the repercussions of diminished cognition and memory in terms of the ability to make decisions on matters relating to treatment and care, including, for example, participation in drug trials.

signed the Minister of Health, Welfare and Sport,
Dr E Borst-Eilers

Annex **B**

The Committee

- Prof. ID de Beaufort, *chair*
  Professor of Medical Ethics, Erasmus University Rotterdam
- Dr RLP Berghmans
  ethicist; University of Maastricht
- Dr Mayke MMA Derix
  clinical psychologist/neuropsychologist; Ziekenhuis Groep Twente, Twenteborg Hospital, Almelo
- Dr RM Dröes
  Psychogeriatric research worker; VU University Medical Center, Amsterdam
- Prof. CM van Duijn
  Professor of Genetic Epidemiology, Erasmus University Rotterdam
- AW Geerdink, *advisor* (until 1 September 2001)
  Ministry of Health, Welfare and Sport, The Hague
- Prof. JKM Gevers
  Professor of Health Law, University Medical Centre (AMC), Amsterdam
- Prof. WA van Gool
  Professor of Neurology, with specific reference to the dementias; University Medical Centre (AMC), Amsterdam
- Prof. TJ Heeren
  Professor of Geriatric Psychiatry; University Medical Centre, Utrecht, Altrecht mental health institution, Zeist

- M Hof, *advisor* (from 1 September 2001)
  Ministry of Health, Welfare and Sport, The Hague
- AA Keizer
  nursing home physician; Vreugdehof Nursing home, Amsterdam
- Prof. CPM Knipscheer
  Professor of Social Gerontology; Free University, Amsterdam
- Dr Y Kuin
  psychologist/psychogerontologist; Nijmegen University
- J de Lange
  psychologist/nurse; Netherlands Institute of Mental Health and Addiction, Utrecht
- Prof. DF Swaab
  Professor of Neurobiology; University of Amsterdam, Director of the Netherlands Institute for Brain Research, Amsterdam
- Dr AW Wind
  GP; Hoorn
- Dr Yvonne A van Duivenboden, *secretary*
  Health Council, The Hague

Annex

C

Clinical definition of dementia

Criteria according to the CBO in: Review of Consensus Diagnosis in dementia syndrome (CBO97)

Proposition 2. The diagnosis of dementia syndrome is made on the basis of a clinical investigation into acquired multiple cognitive disorders which interfere with personal activities in everyday life.

The clinical investigation of multiple cognitive disorders is a central pillar of the diagnosis of dementia syndrome. This involves at least two of the following disorders:

- memory disorders;
- aphasia, apraxia, agnosia;
- disorders of the executive functions (including making plans, purposeful actions);
- delay in thinking and acting.

Dependent on what areas of the brain have been affected, patients may exhibit different combinations of the symptoms described. It is claimed that these disorders give rise to a clear limitation in social and profession-related functioning. Furthermore, they should not only occur in the course of a delirium.

Cognitive disorders should not be congenital. They should only manifest themselves once the cognitive functions have developed. This implies that the cognitive disorders lead to deterioration relative to the previous level.

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Criteria according to the Netherlands Society of General Medical Practitioners in: Standard Dementia (NHG98):

*Concepts**

Dementia can be confirmed if the following four criteria are met:

1 memory disorders: reduced ability to learn new information (imprinting disorder) or to recall information that had been learned previously (recall disorder)

2 one or more of the following cognitive disorders:
– aphasia: reduced comprehension of language and problems of expression using language
– apraxia: reduced ability to carry out motor actions, even though the motor functions remain intact
– agnosia: inability to recognise objects even though sensory functions are intact
– disorder of the executive functions: reduced ability to make plans, to organise, draw logical conclusions and to abstract

3 the above-mentioned disorders clearly have an adverse effect on day-to-day functioning, work, social activities and relationships

4 the disorders do not only occur during delirium**.

---

* The defining criteria for dementia were derived from DSM-IV. However, this only makes reference to criteria for disorders that can cause dementia, such as Alzheimer's disease, vascular dementia and dementia resulting from other somatic disorders. The criteria referred to in the standard are those that are common to all of these disorders. A further distinction is made by including in the diagnosis information about the course of the disease and details of physical examinations. *American Psychiatric Association (APA).Diagnostic and statistical manual of mental disorders. 4th ed. Washington DC: APA, 1994.*

** Delirium is a cognitive disorder that is characterised by reduced consciousness, coupled with reduced capabilities of focusing, maintaining or shifting the attention. *American Psychiatric Association (APA). Diagnostic and statistical manual of mental disorders. 4th ed. Washington DC: APA, 1994.*

Annex

D

Figures

Table D1 Estimate of the number of dementia sufferers in the period from the year 2000 to 2050, based on Ott96a and CBS00.

year	**age**							
	65-69	**70-74**	**75-79**	**80-84**	**85-89**	**90+**	**total**	**year**
2000	5677	11415	28031	47792	49432	27997	**170344**	**2000**
2001	5665	11578	27899	50199	49880	28729	**173949**	**2001**
2002	5694	11682	27878	52271	50595	29398	**177518**	**2002**
2003	5708	11849	27850	54126	50949	30478	**180961**	**2003**
2004	5820	11877	27915	56462	50837	31639	**184549**	**2004**
2005	5937	11955	28062	58135	51173	32872	**188136**	**2005**
2006	6093	11956	28546	58052	54355	33544	**192547**	**2006**
2007	6192	12038	28872	58126	57000	34258	**196487**	**2007**
2008	6345	12088	29342	58154	59258	34900	**200087**	**2008**
2009	6541	12341	29451	58401	61905	35239	**203878**	**2009**
2010	6785	12604	29679	58741	63689	35853	**207352**	**2010**
2015	8841	14470	31496	62150	65133	43540	**225631**	**2015**
2020	8662	18913	36349	66118	69411	46295	**245748**	**2020**
2025	9176	18578	47693	76489	74605	48976	**275517**	**2025**
2030	9843	19728	47009	100653	86979	52505	**316717**	**2030**
2035	9873	21213	50122	99521	114819	60335	**355882**	**2035**
2040	9081	21321	54062	106617	113884	77442	**382407**	**2040**
2045	7909	19626	54496	115329	122785	80906	**401051**	**2045**
2050	7984	17141	50235	116619	133548	86730	**412255**	**2050**

Table D2 Estimate of the number of dementia sufferers by gender in the period from the year 2000 to 2050, based on Ott96a and CBS00.

Women

year	**age**							
	65-69	**70-74**	**75-79**	**80-84**	**85-89**	**90+**	**total**	**year**
2000	3232	6488	17145	35020	37007	21987	**120879**	**2000**
2001	3212	6538	17004	36573	37196	22533	**123056**	**2001**
2002	3214	6568	16892	37936	37663	23013	**125286**	**2002**
2003	3209	6632	16786	39122	37765	23804	**127318**	**2003**
2004	3260	6610	16729	40641	37561	24613	**129413**	**2004**
2005	3316	6618	16691	41758	37605	25445	**131431**	**2005**
2006	3394	6584	16851	41534	39644	25858	**133865**	**2006**
2007	3438	6592	16949	41345	41344	26313	**135981**	**2007**
2008	3511	6588	17130	41145	42737	26674	**137786**	**2008**
2009	3610	6694	17087	41095	44407	26829	**139722**	**2009**
2010	3737	6813	17115	41066	45545	27139	**141415**	**2010**
2015	4861	7687	17685	42280	45084	31970	**149567**	**2015**
2020	4767	10007	20003	43917	46537	32946	**158176**	**2020**
2025	5055	9820	26077	49882	48661	33727	**173221**	**2025**
2030	5399	10425	25627	65191	55559	35157	**197359**	**2030**
2035	5404	11146	27268	64202	72731	39489	**220240**	**2035**
2040	4994	11168	29211	68578	71775	50126	**235852**	**2040**
2045	4344	10326	29331	73711	77081	52260	**247053**	**2045**
2050	4380	8998	27136	74254	83215	55771	**253754**	**2050**

Men

year	**age**							
	65-69	**70-74**	**75-79**	**80-84**	**85-89**	**90+**	**total**	**year**
2000	2445	4927	10886	12773	12425	6010	**49465**	**2000**
2001	2453	5040	10895	13625	12684	6196	**50893**	**2001**
2002	2480	5114	10986	14335	12933	6384	**52232**	**2002**
2003	2499	5218	11064	15005	13184	6673	**53643**	**2003**
2004	2560	5267	11186	15821	13276	7027	**55136**	**2004**
2005	2621	5338	11372	16378	13569	7428	**56704**	**2005**
2006	2700	5372	11695	16518	14711	7686	**58682**	**2006**
2007	2755	5446	11923	16781	15657	7945	**60506**	**2007**
2008	2833	5500	12212	17009	16521	8226	**62302**	**2008**
2009	2931	5647	12364	17306	17498	8410	**64156**	**2009**
2010	3048	5791	12564	17676	18144	8714	**65936**	**2010**
2015	3980	6783	13811	19870	20049	11570	**76064**	**2015**
2020	3896	8906	16346	22201	22874	13349	**87571**	**2020**
2025	4120	8758	21616	26607	25944	15250	**102296**	**2025**
2030	4444	9303	21382	35461	31421	17348	**119359**	**2030**
2035	4469	10067	22854	35318	42088	20846	**135642**	**2035**
2040	4087	10153	24850	38040	42109	27316	**146555**	**2040**
2045	3564	9300	25165	41618	45704	28646	**153998**	**2045**
2050	3603	8142	23099	42364	50333	30959	**158501**	**2050**

Table D3 Estimate of the relationship between the size of the population and the number of dementia sufferers aged 65 and above in the period from the year 2000 – 2050.

year	population size	number of dementia sufferers aged 65 or above	number of citizens per dementia sufferer aged 65 or above
2000	15863950	170344	**93**
2005	16424709	188136	**87**
2010	16864472	207352	**81**
2015	17204906	225631	**76**
2020	17492098	245748	**71**
2025	17735544	275517	**64**
2030	17918871	316717	**57**
2035	18027428	355882	**51**
2040	18058048	382407	**47**
2045	18038166	401051	**45**
2050	18004927	412255	**44**

Table D4 Estimate of the required numbers of nursing home beds and places in residential care homes up to 2010, based on the estimate made in the year 2000 (see 9.1.3).

Nursing homes

year	number of dementia sufferers aged 65 and above	percentage in a nursing home	number of beds required	number of extra beds required
2000	170344	17,8	30318	-
2001	173949	17,8	30960	642
2002	177518	17,8	31595	635
2003	180961	17,8	32208	613
2004	184549	17,8	32846	639
2005	188136	17,8	33485	638
2006	192547	17,8	34270	785
2007	196487	17,8	34971	701
2008	200087	17,8	35612	641
2009	203878	17,8	36286	675
2010	207352	17,8	36905	618

Number of extra nursing home beds required up to 2010 total **6587**

Residential care homes

year	number of dementia sufferers aged 65 and above	percentage in a residential care home	number of places required	number of extra beds required
2000	170344	17,1	29070	-
2001	173949	17,1	29685	615
2002	177518	17,1	30294	609
2003	180961	17,1	30882	588
2004	184549	17,1	31494	612
2005	188136	17,1	32106	612
2006	192547	17,1	32859	753
2007	196487	17,1	33531	672
2008	200087	17,1	34146	614
2009	203878	17,1	34793	647
2010	207352	17,1	35386	593

Number of extra residential care home places required up to 2010 total **6316**

Annex E

Glossary

Abbreviations

AD	Alzheimer’s disease
ADAS-cog	*Alzheimer’s Disease Assessment Scale-B cognitive subscale*: instrument for measuring cognitive functioning
CBO	Dutch Institute for Healthcare Improvement
CBS	Statistics Netherlands
CIBIC	*Clinician Interview Based Impression of Change*: structured interview method providing a rough assessment of the degree of change
CPMP	*Committee for Proprietary Medicinal Products*: EU authority that evaluates drugs for admission to the market
CT	*computed tomography*: a technique for imaging the brain
CvZ	Care Insurance Board
DSM-IV	*Diagnostic and statistical manual of mental disorders, fourth edition*. Manual containing a definition of all psychiatric clinical pictures
KNMG	Royal Netherlands Society for the Advancement of Medicine
MMSE	*Mini mental state examination*: frequently used, simple questionnaire for gaining an impression of cognitive functioning
MRI	*magnetic resonance imaging*: a technique for imaging the brain
NHB	Netherlands Brain Bank
NHG	Dutch College of General Practitioners

NNH	*number needed to harm*: the number of patients experiencing unpleasant adverse effects for each patient in which a therapeutic effect is achieved
NNT	*number needed to treat*: the number of patients that must be treated to achieve a therapeutic effect in a one patient
NVVA	Dutch Association of Nursing Home Medical Practitioners
PDS	*progressive deterioration scale*: method for determining the severity of dementia
PET	*positron-emission tomography*: a technique for examining certain aspects of brain function
QOL	quality of life
RCT	*randomised controlled trial*: randomised, placebo-controlled, double-blind trial
RIO	regional care allocation authority
SPECT	*single photon emission computed tomography*: a technique for examining certain aspects of brain function
WBOPZ	Psychiatric Hospitals (Compulsory Admission) Act
WGBO	Medical Treatment Agreement Act
WMO	Medical Research Involving Human Subjects Act

Terms

anti-dementia drug

drug used to neutralise or halt the cognitive and functional deterioration that occurs in dementia

atherosclerosis

hardening of the arteries

benchmarking

comparing the performance of different institutions and organisations, in which the top performers serve as the calibration point

case manager

someone who monitors all of the ups and downs experienced by the patient and who maintains contacts with institutions and carers on the patient's behalf

cerebrovascular

relating to blood vessels in the brain

cognition

the ability to think, use memory and language, and to use this as a basis for action *comorbidity*

associated disorders

cortex

a part of the brain

cortical function disorders

inadequate functioning of the cortex (see definition of latter)

delirium

temporary reduction of consciousness, often associated with delusions and hallucinations (see relevant definitions)

dominant autosomal transmission

means of transmission in which the susceptibility for a disease is passed on to all descendants

endocrine abnormalities

abnormality caused by excessive glandular activity

hallucination

observing phenomena that are not present in reality

brain biopsy

the removal of a small amount of living brain tissue

hippocampus

the part of the brain that is involved in learning and memory

intoxication

poisoning

ischaemia

localised lack of blood

Lewy body dementia

form of dementia in which characteristic microscopic structures (Lewy Bodies) are found in certain parts of the brain

meta-analysis

systematic method for combining the results of different studies to obtain a final result

neurotransmitter

chemical substances used by nerve cells to transmit signals

orthostatic hypotension

sudden drop in blood pressure following a change in position

pathogenesis

the way in which a disease develops

prevalence

the frequency with which a phenomenon occurs within a given group at a given moment *psychotropic drugs*

drugs that influence the way in which the brain functions

respite care

support for informal carers, in which others temporarily take over caring for the patient

sedation

being tranquillized

serotoninergic

relating to the equilibrium of the substance serotonin (a neurotransmitter, see definition)

toxicity

poisonousness

transgenic methods

methods that make use of genetically modified cells or organisms

vascular

relating to blood vessels

advance directive

a document drawn up by a legally competent individual with a view to influencing decisions about future medical treatment and care, in case he is no longer able to do so. A *negative advance directive* contains an instruction to refrain from certain actions. A *positive advance directive* contains a request that certain actions be carried out.