

Predictive health
information
in pre-employment
medical examinations

OPINION

U 2

Predictive health
information
in pre-employment
medical examinations

OPINION

Contents

A INTRODUCTION	9
1. Subject of the Opinion	9
2. Problems and anxieties	10
3. Definitions and distinctions	12
3.1. Pre-employment and precautionary medical examinations	12
3.2. Prognosis and prediction	13
3.3. Genetic and non-genetic tests	13
B POTENTIAL AND LIMITS OF THE PREDICTABILITY OF DISEASES	16
1. Predictions based on genetic tests	17
2. Predictions based on non-genetic tests	21
3. Predictions based on psychological tests	25
C COLLECTION OF HEALTH DATA FOR PRIVATE-SECTOR EMPLOYMENT PURPOSES AND FOR THE APPOINTMENT OF PERMANENT CIVIL SERVANTS: LEGAL SITUATION AND PRACTICE	26
1. Private-sector contracts of employment	26
1.1. The employer's right to question and the employee's obligation to answer or provide information	27
1.1.1. Basic principles	27
1.1.2. Questions about manifest disorders with prognostic implications	28
1.1.3. Questions about predictive information	28
1.2. Pre-employment medical examinations	29
1.2.1. Introduction	29
1.2.2. Examination for manifest medical conditions with prognostic implications	31
1.2.3. Predictive tests	31
1.2.4. Possible risks to third parties	33
2. Public sector	34
2.1. Public-sector manual workers and salaried employees	34
2.2. Permanent civil servants	35
2.2.1. Selection criteria	35
2.2.2. The right to question	37
2.2.3. Pre-employment medical examinations	39

Published by the German National Ethics Council

Chair: Kristiane Weber-Hassemer
Jaegerstrasse 22/23 · D-10117 Berlin
Phone: +49/30/20370-242 · Fax: +49/30/20370-252
Email: kontakt@ethikrat.org
www.ethikrat.org

© 2005 Nationaler Ethikrat, Berlin
All rights reserved
Permission to reprint is granted upon request
Design and production: Bartos Kersten Printmediendesign, Hamburg
English translation by Philip Slotkin MA Cantab. MITI, London
Printed and bound by Druckhaus Berlin-Mitte

D EVALUATION BY THE NATIONAL ETHICS COUNCIL	44
1. Initial situation and evaluation criteria	44
2. Private-sector employment relationships	46
2.1. Information on a candidate's health status at the time of engagement	47
2.2. Information on a candidate's future health status	48
2.3. Risks to third parties	51
2.4. Precautionary examinations	51
3. Public sector	52
E CONCLUSIONS AND RECOMMENDATIONS	57
Members	67

A INTRODUCTION

1. Subject of the Opinion

The issue addressed by this Opinion is the permissibility of making the conclusion of a private-sector contract of employment or appointment as a permanent civil servant conditional upon the collection and use of predictive health information. The Opinion is thus concerned with the medical potential, the ethical evaluation and the legal limits of the use of information on the risks of illness in the engagement of private-sector employees and permanent civil servants.

The occasion for the specific consideration of this long-debated matter is the type of conflict underlying cases like one decided by the Darmstadt Administrative Court in 2004,¹ which involved the appointment as a permanent civil servant of a teacher who had a high risk of developing Huntington's disease at some point in her life. This case highlights some of the problems and questions raised by health information indicative of an increased risk of future illness.

In the Darmstadt case, a teacher who had applied for appointment as a permanent civil servant, when asked at the required official medical examination about hereditary diseases in her family, truthfully declared that her father suffered from Huntington's disease (Huntington's chorea). She was consequently refused probationary appointment as a civil servant. The education office justified the refusal on the grounds that, although the official medical examination showed that the candidate was currently fit, there was an increased probability that she would develop Huntington's disease within the next ten years, resulting in frequent periods of occupational incapacity and ultimately in premature permanent incapacity. The Darmstadt Administrative Court found in favour of the teacher, whom the school authorities in Hessen were ordered to engage as a civil servant on a probationary basis.

There have been a number of other rulings comparable with that of the Darmstadt Administrative Court.*² Their medical background is as follows. Huntington's disease is a rare, irreversible and progressive disorder of the central nervous system, which generally manifests itself between the ages of 35 and 45 and leads to severe impairments, characterized by the gradual, inexorable loss of physical and mental faculties, sometimes culminating in total helplessness. Although the symptoms can now be mitigated by drugs, the course of the disease cannot as yet be halted. It is inherited as an autosomal dominant disorder, which means that every child of a carrier of the predisposition has a 50% risk of inheriting the relevant mutation. Hence the family medical history can indicate whether a person carries the risk.** Genetic testing can now determine whether an individual carries the mutation and will therefore develop the disease.

2. Problems and anxieties

Such cases give rise to a number of questions. Can a person be compelled by law or on social grounds to generate predictive genetic information about himself*** and to disclose it to third

* For instance, the family history of a young man in Bavaria showed that he had a 50% probability of developing Huntington's disease, so that he was refused appointment in the police force with the status of a permanent civil servant. To preserve his prospects of appointment as a permanent civil servant, the applicant had undergone a genetic test, which revealed that he did not carry the predisposition to the disease. Another man, in Hessen, was refused engagement in the police force after truthfully declaring at his medical examination that his grandfather suffered from Huntington's disease. The applicant had less than a 25% risk of himself developing the disorder at some point, as his father, who was himself a member of the police force with permanent civil servant status, was healthy.

** A newborn baby one of whose parents suffers from Huntington's disease has a 50% risk of developing the condition (the "a priori risk"). The older the child becomes without falling ill, the less probable it is that he carries the causative hereditary predisposition (the "a posteriori risk"). If the child's father has reached an age at which the risk of developing the disease has fallen to, say, 20%, the risk applicable to his son or daughter at age 18 will be about 10%.

*** For simplicity, the masculine form is used in this Opinion for both sexes.

parties? If one carries a genetic predisposition to a disease that is likely, with a certain degree of probability, to become manifest in the future, or if one is a member of a group with a corresponding familial risk, must one expect to be disadvantaged when, for example, seeking employment or concluding an insurance contract?

A widespread consensus exists on the need for regulation of these matters. Modern medicine and genetics are identifying associations with genetic predispositions for more and more disorders. Each such association permits the development of methods of examination whereby predictive health information can be generated (see Part B). The collection and use of such information already has a statutory basis in a number of countries; a corresponding law is in preparation in Germany. In this Opinion, the National Ethics Council considers some of the issues in question – in particular, whether it should be permissible to make the conclusion of a contract of employment or appointment as a permanent civil servant conditional upon the collection and use of predictive genetic or non-genetic health information.

The discussion concerns the striking of an appropriate balance between the interests of the private- or public-sector employer, on the one hand, and those of the applicant for a post or for appointment as a permanent civil servant, on the other. The issue for the applicant is the right to informational self-determination. The knowledge that one is at risk of developing a serious illness in the future may cause appreciable distress.* Hence no one should have such information forced on him against his will: protection of the right of self-determination in this case entails a right to remain in ignorance. This right may be violated if candidates are required to have their predisposition

* This is particularly so if the predicted disease is untreatable. For this reason, after human genetic counselling and reflection within the family or in a self-help group, many people at risk of developing Huntington's disease do not take advantage of the possibility of undergoing predictive genetic diagnosis to establish whether or not they actually do carry the predisposition.

to future illness established and to disclose it in order to preserve their prospects of engagement for a private-sector post or appointment as a permanent civil servant. Again, it should not be permissible for applicants for private-sector jobs or for appointment as permanent civil servants to be unjustifiably disadvantaged (discriminated against) because they carry a risk of developing a given disease. On the other hand, the private- or public-sector employer has a justified interest in obtaining a fit and efficient employee or civil servant who will not be incapacitated by illness in the foreseeable future. An appropriate balance must be struck between these two interests.

3. Definitions and distinctions

3.1. Pre-employment and precautionary medical examinations

Pre-employment medical examinations are carried out by an occupational physician at the instigation of an employer before the conclusion of a contract of employment. They are intended to permit assessment of the applicant's capacity for work and of his health-related fitness. A private-sector employer may make the conclusion of a contract of employment, and a public-sector employer appointment as a permanent civil servant, conditional upon the result of the pre-employment medical examination. Where third parties are likely to be put at risk, specific fitness tests are stipulated (e.g. for pilots or the drivers of passenger-carrying conveyances).³

Precautionary examinations in the field of occupational medicine must be distinguished from pre-employment examinations. The former are conducted partly in order to comply with occupational safety and health legislation with a view to identifying potential workplace hazards and work-induced diseases. However, they are also concerned in part with workers' general healthcare.

In addition, some precautionary examinations are prescribed by law – e.g. by requirements of the employers' health and safety organizations and the Hazardous Substances Regulations. These requirements provide that anyone likely to be put at risk in the foreseeable future by engagement for or continued employment in a given post may not be engaged for or continue to be employed in that post (e.g. posts involving work with hazardous chemicals or intense noise).⁴ Again, where relevant hazards exist, the medical officer must also document an employee's health status, in case it is subsequently necessary to establish whether an injury or disorder was acquired at the workplace or predated the employment relationship.

This Opinion deals solely with the collection and use of predictive health information in the context of pre-employment medical examinations.

3.2. Prognosis and prediction

Medical science distinguishes between the concepts of prognosis and prediction. A prognosis is defined as a statement about the future course of a past or currently existing condition, whereas prediction is concerned with the risk of a disease that has not yet manifested itself. Both categories of forecasts of an individual's future health and illness – which may overlap – raise similar problems in relation to pre-employment medical examinations, and are therefore considered together in this Opinion. For simplicity, only the terms “prediction” and “predictive health information” are used here, except where the distinction between prediction and prognosis is relevant.

3.3. Genetic and non-genetic tests

For the purposes of this Opinion, genetic tests are deemed to be all those which yield direct information on a person's genetic

endowment by analysis of substances taken from the body. These are tests applied to chromosomes (cytogenetic analyses), DNA or RNA (molecular genetic analyses) or gene products (biochemical or immunochemical analyses). Depending on the presence or absence of pathological manifestations, the examination will constitute either genetic diagnosis or a predictive genetic test. Conversely, phenotypic examinations (e.g. analyses of a person's externally visible characteristics) or imaging techniques are not considered to be genetic tests, even if information on genetic traits can in certain cases be derived from them.

However, this Opinion cannot be confined solely to genetic tests. Predictive health information that permits evidence-based conclusions as to the future probability of conditions not yet manifest at the time of examination can be generated by other methods too. That said, predictive genetic tests have certain particularities. Genetic risk factors persist throughout the life of an individual, even if their effects can be controlled at phenotypic level. For this reason, they are often seen as especially threatening. Again, a number of diseases can be predicted by genetic tests with very high probability (100% in some cases). Furthermore, the long time span achievable by genetic tests is not obtained with other methods. Finally, genetic tests of hereditary characteristics yield information on the subject's relatives with greater certainty than other techniques. Notwithstanding these differences, however, predictive health information obtained by non-genetic methods gives rise, with regard to the selection of applicants for employment in the private sector and for appointment as permanent civil servants, to comparable problems to those presented by genetic tests, as they too can yield useful medical predictions. The use of predictions based on non-genetic tests is therefore also considered in this Opinion.

The following sections deal, first, with the potential and limits of the predictability of diseases (Section B) and with the practice and legal situation of the collection of health-related data for the purposes of appointment to private-sector posts and to those with permanent civil servant status (Section C).

Next, the problems posed by the use of predictive health information in the conclusion of contracts of employment in the private sector and in the appointment of permanent civil servants are discussed and possible solutions are assessed (Section D). The Opinion ends with recommendations on the future application of predictive health information (Section E).

B POTENTIAL AND LIMITS OF THE PREDICTABILITY OF DISEASES

In the exploration of the human genome over the last 20 years, techniques of testing for predisposition to hereditary diseases have been developed. Monogenic predispositions are distinguished from those with polygenic or multifactorial causes. The first group includes a large number of diseases that become manifest during the course of life and, while susceptible to predictive diagnosis, are at present predominantly untreatable – for example, various hereditary muscular diseases and neurodegenerative disorders. Although predictive diagnosis does not as yet possess preventive or therapeutic significance, it may be important in helping an affected individual to plan his life. However, it becomes medically relevant in the case of diseases that can in principle be treated or prevented, such as hereditary cancers. In this group of diseases, genetic test results can be used, for instance, to decide on appropriate methods of avoiding the actual development of cancer (early diagnosis or prophylactic surgery). In addition, with regard to the efficacy and toleration of drugs, more importance may come to be attached in the future to individual genetic endowment.

In polygenic or multifactorial predispositions, the effect of a single gene or gene variant is appreciably less than in those due wholly or predominantly to a mutation in one gene. Examples include familial predispositions to asthma or adult-onset diabetes, as well as to cardiovascular disorders, for which various studies have already identified genetic risk factors.

Hence forecasts of the future occurrence or course of diseases may differ widely in their ability to determine:

- » the probability of occurrence of the disorder in question (very high or only above average for the population);
- » the period of latency prior to the (potential) future time of onset (whether the disease becomes manifest early, in the medium term or late);
- » the severity of the (potential) future disease; and

» the certainty or uncertainty with which the severity of the future disease can be predicted.

These predictions may be based on either genetic or non-genetic test methods.

1. Predictions based on genetic tests

The human genome contains some 3.2 billion “building blocks”, mostly in two copies. These form about 25 000 genes and include an as yet unknown, but no doubt much larger, number of regulating elements. In a few million of these building blocks, variants (“polymorphisms”) occur so frequently that they can be detected in at least 1% of the population. Approximately 99.9% of the building blocks – i. e. the sequence of “genetic letters” in the genome (the nucleotide sequence) – of two unrelated individuals of the same sex coincide. As far as can be determined today, a few hundred thousand of an individual’s gene variants are functionally relevant. They are responsible for all hereditary differences between people, from “normal” characteristics such as skin and hair colour to inherited diseases. Where characteristic symptoms suggest the possibility of a given hereditary disorder in an individual, genetic tests can be conducted to confirm the diagnosis. These may also be an option for a person whose familial history or particular diagnostic constellation indicates an increased risk of a specific genetic disorder. In theory, however, mass screenings for individual or even large numbers of gene mutations are also conceivable. With the further development of genetic laboratory techniques and the progress of scientific knowledge, blanket genetic tests of this kind (gene chip or microarray technology) will become possible at low cost.

Predictive genetic diagnosis can forecast the future onset of a disease or the probability of its occurrence. Since disorders with wholly or partly genetic causation can commence at any age, these techniques can be used to predict subsequent onset

sometimes decades before the condition becomes manifest. However, it is also possible for the disease not to occur at all.

Genetic predispositions to illness fall into two basic groups: those caused mainly by mutations in a single gene and those due to a combination of several genetic and non-genetic factors. Genetic tests can also be distinguished by other criteria.

Monogenic hereditary diseases and predispositions. The probability of a given hereditary predisposition becoming manifest in a carrier (its “penetrance”) depends on the nature of the genetic effect. Monogenic hereditary diseases are due to mutations of high or even 100% penetrance. Depending on the type of disorder, the pathology may already be manifest at birth, or may not occur until later in life. Detection of a mutation with 100% penetrance means that the disease will become manifest in all cases unless the individual concerned dies from some other cause first. Penetrance of 100% is observed, for example, in Huntington’s disease, the spinocerebellar ataxias, various hereditary muscular disorders, and forms of inherited blindness and hearing impairment or deafness. However, monogenic hereditary diseases account for only a small proportion of all disorders.

In the case of a hereditary predisposition to a cancer, the probability of the condition becoming manifest in the carrier of a mutation is usually in the range 50 to 80%. With many of these diseases, an appropriate familial determination can establish whether the predisposition exists in individual family members, with a concomitant high risk of manifest disease. The risk of onset of the relevant monogenic hereditary disease in a specific situation can also be definitively ruled out by a genetic test. In view of the very low prevalence of each individual monogenic hereditary disease among the population, genetic tests are in practice appropriate only in the event of suspicion due to pathological symptoms or the family history.

Multifactorial disorders. Besides the mutations that have phenotypic effects necessarily or with high probability, medical science is discovering more and more mutations or genotypes associated with a slight or moderate increase in the risk of illness, for instance by a factor of 1.2 or 1.5 respectively. In other words, instead of 10 out of 1000, 12 or 15 out of 1000 people would then develop the relevant disease. Even so, the genotype concerned might possibly have functional significance. A combination of different genotypes and exogenic factors (e.g. lifestyle) may contribute to determining whether a genetic predisposition leads to the onset of manifest disease. Knowledge in this field is still rudimentary. A fundamental problem is that the correlation between a genotype that increases a risk of illness only slightly and a specific disease is difficult to detect because a given genotype may for example become pathogenically significant only in combination with another genotype at a different gene locus, whether or not in interaction with specific external agencies. The problem can only be solved by systematic studies of large groups of patients. Considerable scientific advances in this field may be expected in the next few decades. However, in many cases it will not be possible to specify an exact risk, but only a range.

Genetic susceptibility to harmful substances. Genetic factors may be responsible for particular sensitivity to chemicals, such as substances and materials used in production processes, as well as medicinal products. Predictive testing for such susceptibilities is in the interests of employees, as an individual with a relevant predisposition may have a significantly increased risk of illness when exposed to a given chemical substance. Examples are glucose-6-phosphate dehydrogenase deficiency, in which certain chemicals can cause red blood cells to break down (haemolysis), or alpha-1-antitrypsin deficiency, where the development of pulmonary emphysema is facilitated by air pollution.

In addition, allergy testing may have great practical importance (e.g. as regards eczema in bricklayers, asthma in bakers, or allergies in persons working with experimental animals). Genetic factors play a substantial part in the causation of allergies, although the predisposition is multifactorial. An allergy test may also be in an employee's interests, as a severe allergy may make it impossible for the individual concerned to do a specific job.

Genetic risk profiles. Widespread concerns have been voiced that it might in the future become possible, when many pathogenic genes and their variants have been discovered, to establish a genetic risk profile for an individual and to use it for predicting the occurrence of various diseases without the need for a family history. These concerns usually relate to the common severe illnesses such as diabetes mellitus, hypertension, myocardial infarction, strokes, allergies, autoimmune diseases, epilepsy or psychiatric disorders. Twin and family studies have convincingly demonstrated that genetic factors are involved in the genesis of these and many other diseases, although in ways that are not yet fully understood.

An appreciable proportion of the genetic predispositions to the conditions mentioned are likely to be discovered within the next decade. A knowledge of the genetic foundations will also permit comprehensive predictive genetic diagnosis. It will become technically feasible to determine individual genetic patterns of predisposition to a wide variety of common severe disorders (risk profiles). Individuals will be distinguishable in accordance with their "dose" of hereditary predisposition to specific diseases.

However, it is important not to overlook the fact that, with the increasing realization of the complexity of genotype-phenotype relationships in multifactorial disorders, the interpretation of findings becomes more and more complicated, thus exacerbating the risk of misinterpretation. Again, many individuals will carry more than one genetic predisposition, possibly calling for mutually exclusive preventive measures. For these

reasons, the difficulties of applying the growing body of genetic information are more likely to increase than to decrease.

Owing to the far-reaching potential consequences of predictive genetic tests, attention has repeatedly been drawn to the importance of the prior imparting of information and of the right to remain ignorant, as well as to the need for human genetic counselling.

Possible genetic determination of personality traits. Many expect that one day genetic tests will also be able to determine an individual's personality traits. It has been shown that close relations – in particular, monozygotic twins – are more similar to each other in terms of measurable personality traits than more distantly related or indeed unrelated persons, and that the greater similarity can be interpreted genetically. However, these are only statistical correlations. So far there is very little evidence of actual correlations with specific gene variants. Even if it eventually becomes possible to establish genotype-phenotype correlations affecting personality, these will always be no more than statistical correlations with a relatively low level of significance. The human brain possesses substantial functional redundancy, so that even if a given function is less well developed, a considerable compensatory potential exists. Environment and biography exert appreciable influence on this system too. Hence psychological tests are likely to remain superior to genetic tests for the measurement of personality traits.

2. Predictions based on non-genetic tests

Predictions of the occurrence of a given disease or the probability of its occurrence can also be made on the basis of non-genetic methods. Many of the testing techniques commonly used in medicine permit prognoses of the course of developing or already manifest disorders and include at least a predictive element. These methods must therefore also be considered in

relation to the issue addressed in this Opinion, particularly as predictions may be the unintentional result of a diagnosis made on account of unexplained symptoms.

Medical history. In certain circumstances, the taking of a medical history and the collection of information on a person's current lifestyle may permit predictions of future risks. A past viral infection of the liver, heart or brain may be indicative of a "weakness" in the relevant organ. In the case of intermittent disorders with immune reaction particularities – e.g. rheumatic diseases, asthma, neurodermatitis, psoriasis or multiple sclerosis – the future health status of an individual patient can to some extent be predicted on the basis of the previous course of the condition. Lifestyle factors such as prolonged nicotine use measurably increase the risk of cancer of the respiratory tract and urinary bladder, as well as of atherosclerosis and its sequelae such as myocardial infarction and strokes. Alcohol use extending over a period of many years carries the risk of increased doses and dependency, with a plethora of medical and social consequences. Occupational stresses and exposure to harmful substances, as are familiar in occupational medicine, may also pose specific health risks.

Familial history. If certain disorders known to be hereditary occur in a person's family, this may indicate an increased risk of illness in the individual himself. There are a number of dominant hereditary neurodegenerative disorders that become manifest during the course of life – e.g. Huntington's disease, some forms of Alzheimer's, various forms of cerebellar and muscular conditions and peripheral neuropathies. Specific forms of most cancers that run in families by the mechanism of autosomal dominant inheritance are known – for example, breast and ovarian cancer, various kinds of intestinal and skin cancer, and malignant tumours of hormonal glands such as the thyroid. In all these cases, a sufferer's children and siblings have up to a 50% risk of developing the disease. In other

disorders occurring in familial clusters (multifactorial disorders), a simple hereditary pathway is not identifiable. These include high blood pressure, diabetes mellitus and allergies. In the case of psychiatric illnesses too, family clusters are observed. As a rule, the identifiability of a person's risk of illness depends on the number of family members known to be affected and on their age of onset. The statistical risk of illness for a relative can be estimated from the family pattern, and ranges between a few percent and over 30%. More precise predictions based solely on the family history are not in general possible.

The familial history includes information on family members who are themselves usually unaware that medical predictions are being made about them or with their help and that diagnoses of family members are being made.

Medical examination. Physical examination by a doctor can reveal a number of early manifestations of disorders and risk constellations. For instance, high blood pressure or high body weight presents a particular risk of cardiovascular diseases. The results of physical examination often indicate a need for further tests for a wide variety of organic disorders.

Imaging techniques. These include, for example, X-ray and ultrasound examinations, computer tomography and magnetic resonance tomography. Such examinations are usually carried out after simpler methods have suggested an increased risk. However, X-ray and ultrasound examinations are also used for screening population groups not at increased risk. The imaging techniques mentioned can diagnose early manifestations of disorders that present an increased risk to health in the longer term – e.g. a wide variety of tumours, hereditary conditions such as polycystic kidney disease, congenital malformations of certain organs and degenerative brain disorders. The prognosis depends mainly on the nature of the disease, its amenability to treatment and its current stage.

Electrophysiological tests. Testing of the electrical activity of the heart (electrocardiography, or ECG) is an important technique of functional diagnosis of the myocardium and its contractility. An ECG permits prognoses and determination of the longer-term risk of illness. The electrical activity of the brain is tested to monitor epileptics and their therapy (electroencephalography, or EEG). An EEG can also identify an increased risk of convulsions, for instance after a head injury or in relatives of epilepsy sufferers.

Biochemical blood tests. A large number of tests of many different kinds currently exist. In addition to the testing of basal function, provocative tests of the functioning of certain organs may be conducted. Tests of blood chemistry are carried out not only where a specific condition is suspected but also, owing to their high diagnostic potential and low cost, for universal screening purposes. In this way conditions such as chronic inflammations, metabolic disturbances, tumours and increased risks of cardiovascular diseases can be identified. Standard tables have been compiled for establishing, for instance, the ten-year risk of a lethal cardiovascular disorder in healthy subjects on the basis of age, sex, smoking/no smoking status, blood pressure and blood cholesterol level.

Prognostic test methods. Diseases may take different courses. They may be completely and permanently cured (e.g. many infections, bone fractures, or successfully treated tumours); they may proceed in phases, intermittently or chronically (as in the case of epilepsy, multiple sclerosis or rheumatic disorders); or they may prove lethal if therapy fails (for instance, malignant tumours or myocardial infarction). At onset, the course of a disease or the likelihood of successful therapy is often not at first clear. Medicine has long-established clinical parameters for forecasting the outcome of the pathological process, often based on probabilities. For example, probabilities of a cure or of survival can be associated with various aspects of a cancer

(the affected organ, tumour size and extent, the existence of metastases, or histopathological findings). The prognosis can be further refined by the use of modern laboratory techniques, for instance by determining the pattern of gene activity in the tumour (the expression profile).

3. Predictions based on psychological tests

Specifically directed psychological tests are often conducted to determine an applicant's fitness for a given occupation. This applies in particular to employees – e.g. pilots, train drivers or policemen – whose performance carries potential risks to third parties. The relevant examinations include on the one hand performance tests, for example of intelligence, concentration or skill, and on the other personality tests, for determining such parameters as a person's standard reactions, for instance to stress. Healthy subjects also undergo such tests, the aim being to classify them in accordance with the criteria of a particular fitness profile. Similar techniques are sometimes used for filling posts in industry. These tests are often conducted by specialized human resources consultancies, which select candidates by means of "assessment centres".

C COLLECTION OF HEALTH DATA FOR PRIVATE-SECTOR EMPLOYMENT PURPOSES AND FOR THE APPOINTMENT OF PERMANENT CIVIL SERVANTS: LEGAL SITUATION AND PRACTICE ⁵

1. Private-sector contracts of employment

When contracts of employment are concluded in the private sector, the main ways of collecting information on the health status of future employees are direct interview, questionnaire or a pre-employment medical examination. The conditions governing the collection of this information are based partly on statute law and partly on narrower definitions established by the decisions of the courts.

In terms of statutory regulation, the main relevant provisions are those of the Federal Data Protection Law (BDSG). These imply that only the specific information required for the particular contract of employment may be collected. Special requirements apply to health data (Section 28(6) No. 3 BDSG): the use of health data is permissible only if there is no reason to assume that interests of the person concerned that are deserving of protection argue against such use and that these interests take precedence. For the purposes of the necessary balancing of interests, the principles of the right to question established by case law, as set out in the following sections of this Opinion, must be observed.

There are still no specific provisions on genetic data. These were demanded as long ago as in 1996 by the International Labour Organization (ILO). The ILO Code of Practice on the protection of workers' personal data explicitly states that genetic screening should be limited to cases explicitly authorized by national legislation. A similar formulation can be found in the European Commission's 2004 draft on the protection of workers' data. In Germany, the Bundestag [Lower House of Parliament], in the context of the demand for statutory regulation

of the protection of workers' data, has repeatedly advocated statutory provisions on the processing of genetic data.

The statutory and judicial requirements applicable to the collection of health data also have implications for the possibility of obtaining additional information on the basis of explicit consent by the applicant. Such consent can relate solely to access to information that is required for the purposes of the specific contract of employment and whose use would also be permissible according to the principles of the right to question established by case law. This generally accepted principle was developed to counter the pressure to which applicants are exposed owing to the particular importance attaching to the securing of employment.

1.1. The employer's right to question and the employee's obligation to answer or provide information

1.1.1. Basic principles

According to the decisions of the Federal Labour Court (BAG), an employer is granted a right to question only to the extent that he has a "justified interest, which can be approved and is deserving of protection, in obtaining an answer to his question for the purposes of the contract of employment"⁶ This interest of the employer must objectively be so strong that it outweighs the employee's interest in the protection of his personal rights and in the inviolability of his individual sphere. Accordingly, the extent of the employer's right to question in relation to existing medical conditions depends on whether these are relevant to the employment relationship to be entered into. In the view of the BAG, the employer's right to question is confined "essentially [...] to the following points:

»Is the prospective employee suffering from a disease or impairment of health status whereby his fitness for the proposed

activity is restricted permanently or at periodically recurring intervals?

»Is the prospective employee suffering from communicable diseases which, while not impairing his own performance, will place future colleagues or customers at risk?

»Is there a likelihood of incapacity to work at the time of engagement or in the foreseeable future, due for example to a planned operation, an approved stay at a rehabilitation clinic or a current acute disorder?»⁷

Apart from this, employees are obliged only in particular circumstances to disclose illnesses without being specifically requested to do so. Such circumstances exist only if the applicant is aware that he is totally unfit for the work offered to him or that it is impossible for him to discharge the required duties.

1.1.2. Questions about manifest disorders with prognostic implications

If an employee is asked about a condition such as hypertension or hyperlipidaemia, he is admittedly also being asked about a manifest (health-related) condition; however, an additional, if not the principal, aim of the question is to permit prediction of his future health status. On the basis of the foregoing principles laid down by the BAG, such a question is permissible if the answer is relevant to the contract of employment. But this is not likely to be the case, in relation to the conditions mentioned, except in occupations involving intense physical exertion. Only then is it appropriate to assume that the pre-existing condition may lead in the relatively short term to the loss of the employee's labour. Yet in practice it is manifestly the rule for questions about the above medical conditions to be asked.

1.1.3. Questions about predictive information

Unlike the right to question in relation to existing medical conditions and diseases, questions on predictive genetic information

known to the employee are directed solely towards the assessment of a health risk. The principles developed by the courts apply equally to the collection of such information. However, these principles have been interpreted in different ways.

It is sometimes concluded from the above that questions on predictive genetic health information are always impermissible. According to this view, an employer can never have a justified interest that can be approved and is deserving of protection in obtaining answers to such questions, because the prospective nature of genetic analyses makes it completely uncertain whether a disease will become manifest at all. In the few cases in which the occurrence of the disease can be predicted with almost 100% certainty,^{*} the time of onset still remains indeterminate. This information is therefore often not relevant to the current employment relationship, as the employee may have changed jobs by the time the disease becomes manifest. Hence only an abstract risk to the employer's interests exists. For this reason, information on the results of genetic tests is held to be unnecessary and disproportionate in terms of the employee's personal rights.

Conversely, in exceptional cases it is deemed incumbent on an employee to disclose information – but only if the employee is absolutely certain that his genetic predisposition will prevent him from carrying out the proposed work.

The courts have not to date ruled explicitly on these issues.

1.2. Pre-employment medical examinations

1.2.1. Introduction

Another way of obtaining health information about job applicants is the use of pre-employment medical examinations (which are usually compulsory in large enterprises). These are medical examinations required by the employer, according to

* For example, Huntington's disease.

the results of which a contract of employment will or will not be concluded. Such examinations are usually conducted only after the selection procedure has narrowed the field to one specific applicant. The aim of a pre-employment medical examination is thus not to select the “best” applicant, but to exclude one already chosen for a given activity should he be unfit for that activity on health grounds.

However, in carrying out pre-employment medical examinations, occupational physicians often also conduct tests of an applicant’s general health status, in order to draw his attention to possible risks to his health; these constitute precautionary examinations. Although the distinction between the two kinds of examination is in theory quite sharp, the boundaries between them are in practice blurred. The same applies to the question of possible occupational-medicine concerns about the proposed post, for instance in the case of an allergy or a pre-existing liver disorder in a paint shop worker. Here, the main purpose of the examination is to prevent existing pathology from becoming manifest or being exacerbated in the workplace.

The scope of the medical examinations to be carried out upon the engagement of an employee is seldom fixed by law or collective agreements. It essentially conforms to the de facto standard adopted in occupational medicine, and thus comprises a general medical examination (height, weight, pulse, blood pressure, eyesight and hearing, pulmonary function, condition of mouth and teeth, examination of the thorax, digestive organs and extremities, testing of the nervous system and reflexes, and possibly ECG), as well as the determination of certain laboratory values (complete blood count, blood sedimentation, blood sugar level, and liver, uric acid and creatinine values). In addition, an extensive medical history is often taken from the applicant himself, covering not only present and past activities and former occupational stresses and exposures but also lifestyle, existing and past diseases or complaints and any current medications. The familial history is manifestly of only secondary importance and serves mainly to complete the overall impression

(e.g. metabolic disorders or cursory questions about hereditary diseases). According to company medical officers, even family clusters of diseases do not influence the decision as to a candidate’s fitness. Pre-employment examinations do not as a rule include questions about hereditary disorders such as Huntington’s disease.

Employers receive from the company medical officer only the result of the applicant’s health-related fitness examination, but no information on the results of individual tests and diagnoses. The company medical officer may also formulate conditions – e.g. individually tailored protective measures – subject to which there will be no health concerns. Time-limited health concerns may also be expressed and reviewed in a subsequent examination. Permanent concerns resulting in a recommendation not to appoint an applicant on health grounds are, according to company medical officers, the exception.

Determination of the permissibility of pre-employment medical examinations is substantially governed by the principles laid down by the Federal Labour Court (BAG) on the right to question.

1.2.2. Examination for manifest medical conditions with prognostic implications

It is doubtful whether the majority of tests carried out in practice (see Section 1.2.1. above) are in fact relevant to the particular job situation. If they only constitute a wide-ranging determination of an applicant’s health status, they must be deemed impermissible.

1.2.3. Predictive tests

Possible future pathology has hitherto in practice manifestly played no part in establishment of an applicant’s health-related fitness. Certain behaviours, such as smoking or the practice of dangerous sports, associated with an increased risk of future

diseases or accidents are not used as criteria for exclusion because they are deemed to be aspects of personal lifestyle that belong to an individual's private sphere.*

Company medical officers in fact tend to take a sceptical view of the value of predictive information. Although some 20% of employees leave their jobs prematurely for health reasons,** this is attributable mainly to disorders of the locomotor system and to psychiatric conditions and behavioural disturbances. These cannot be unequivocally predicted. Assessment of an applicant's personality and motivation is not regarded as falling within the competence of a company medical officer. However, some spinal conditions, such as scoliosis, may signify that an applicant is unsuitable for a job involving constant heavy lifting.

Some companies require job applicants to be screened for drugs in their pre-employment medical examination. Current drug use is stated by occupational physicians to be one of the most frequent reasons for a company medical officer to declare an applicant unfit. An HIV test is carried out only in certain occupations involving a risk to health or where the applicant's capacity would be limited owing to his acquired immune deficiency, for instance because tropical diseases might take a more severe course and any necessary active vaccinations might be less effective.

According to company medical officers, there is no standard assessment of prior medical conditions with predictive value or of existing intermittent disorders. If there is a risk of premature incapacity for work, an applicant is occasionally deemed unfit on health grounds – e.g. in the case of a history of cancers, multiple sclerosis or myocardial infarction.

Very little experience with predictive genetic information has hitherto been amassed in the field of occupational medicine.

* Whether an employer can exclude smokers from certain jobs on non-medical grounds is another matter.

** However, not all labour-market-induced early retirements are due to illness. In Germany, persons on the general labour market who are able to work for less than six hours a day for health reasons receive a pension for reduced earning capacity.

According to the experts consulted at the National Ethics Council's hearing, relevant findings – e.g. determination of the genetic mutation responsible for Huntington's disease – do not constitute grounds for rejection. With regard to the predisposition to other disorders too, there is plainly felt to be no need for the use of predictive health information.

As stated in Section 1.1., the principles on the right to question developed by the courts apply also to tests for circumstances with predictive significance and hence in particular to genetic tests – as with the collection of genetic data in all other situations. Here too, however, opinions diverge. Some again call for statutory prohibition, whereas others consider that such tests are permissible if the genomic analysis serves the purpose of diagnosing acute or imminent conditions that may result in the applicant's becoming unfit for work, appreciably limit his specific fitness for the proposed post, or carry an appreciable risk to himself, to customers or to colleagues. Blanket genetic screening of this kind, without any indication of a prior disorder, is universally deemed impermissible.

1.2.4. Possible risks to third parties

Predictive health information is regarded as necessary where it serves the purpose of precluding possible risks to third parties, as in the case of compulsory fitness tests for pilots. An aeromedical fitness certificate calls not only for tests of eyesight and hearing, blood and urine, but also for an ECG, an EEG and measurements of lung volume and ventilation rates. Applications for a certificate are refused in the event of the diagnosis of, for example, epilepsy, psychotic symptoms, neuroses, addictive conditions and personality disorders, especially if these have led to strange behaviour – i.e. behaviour regarded as deviating from the norm.⁸

Other predictive information is also used. For instance, if a person's blood pressure, with or without treatment, permanently exceeds 160 (systolic) or 95 (diastolic), he is deemed unfit for flight crew duties. An individual decision on fitness may be

necessary in the case of, for instance, slightly raised blood pressure coupled with other risk factors. To facilitate assessment of the risk of cardiovascular disorders, serum lipids, including cholesterol, are determined at initial examination and in the first examination after a pilot reaches the age of 40. Applicants with a Body Mass Index (BMI)^{*} exceeding 35 may be deemed fit only if specific conditions are satisfied. As a general rule, physical “deviations from the norm”, including obesity or muscle weakness, may necessitate in-flight or simulator-based medical tests.

2. Public sector

2.1. Public-sector manual workers and salaried employees

The principles set out above on the right to question and on pre-employment medical examinations should, according to the prevailing view expressed in the literature, apply also to public-sector manual workers and salaried employees. Under Section 7(1) of the Federal Collective Agreement for Public Sector Salaried Staff (BAT), these workers must, at the employer’s request, demonstrate their physical fitness by means of a certificate issued by a doctor appointed by the employer. According to the literature, this provision effectively results in a procedure that essentially corresponds to that applicable to employees in the private sector. It also manifestly corresponds to actual practice.

* The Body Mass Index is defined as weight in kilograms divided by the square of height in metres. A BMI of 35 corresponds, in a person 1.80 m (5 ft 11 in) tall, to a body weight of 113 kg (17¾ stone or 249 pounds).

2.2 Permanent civil servants

2.2.1. Selection criteria

Under Article 33(2) of the German Basic Law,^{*} (Section 8(1) of the Federal Law on Permanent Civil Servants (BBG),^{**} and the relevant provisions of the laws on permanent civil servants applicable in the individual *Länder*, the appointment of permanent civil servants is governed by the principle of “selection of the best”. This means that the fittest candidate must always be selected. The concept of fitness is a comprehensive criterion of suitability that covers the entire personality of the applicant and subsumes the other two elements explicitly mentioned in Article 33(2) of the Basic Law (qualification and professional background). It is acknowledged that the fitness of an applicant includes the aspect of health. Both jurisprudence and the literature presuppose that an applicant is unfit in health terms if the possibility of future disease or indeed of permanent incapacity to work before attainment of the general age limit or of any special age limit (as, for example, in the case of the police force) “cannot be ruled out with a high degree of probability”.⁹ According to the decisions of the courts, doubts as to the health status of an applicant may arise not only from the medical examination but also from other circumstances, such as long periods of sick leave during the probationary period.¹⁰ This means that the judgement of an applicant’s health-related fitness includes a prognostic element that allows a probability assessment and does not only cover the applicant’s physical health status at the relevant time.¹¹

The demanding requirements laid down by the courts with regard to the health-related fitness of an applicant are deemed

* “Every German has equal access to any public office according to his fitness, qualification and professional background.”

** “Candidates shall be found by calls for applications. They shall be selected according to fitness, qualification and professional background without regard to sex, descent, race, faith, religious or political views, origin or relationships. [...]”

to be justified by the risk bound up with the public-sector employer's duty of care.¹² This risk arises because a permanent civil servant is required to serve until the prescribed age of retirement and has a lifelong duty of loyalty, while the employer has a duty of maintenance and care for the lifetime of the permanent civil servant and of his surviving dependants (Sections 54 and 79 of the Federal Law on Permanent Civil Servants [BBG]). Dismissal on the grounds of ill health, as provided for in the private-sector labour legislation, is precluded.¹³ Owing to these mutual, lifelong obligations, particular importance is attributed to the requirement of health-related fitness.

However, the decisions of the administrative courts have been criticized on the grounds that ultimately they merely transfer the risk to the statutory pension scheme. According to this view, a candidate should be declared unfit on health grounds only if he would be so declared as a severely disabled person.* The requirements as to the prospective capacity for work of severely disabled individuals vary from *Land to Land*, ranging from five years (e.g. in Baden-Württemberg,¹⁴ Bavaria¹⁵ and Schleswig-Holstein¹⁶) to ten years (e.g. in Hesse,¹⁷ North Rhine-Westphalia¹⁸ and Saxony¹⁹). In Lower Saxony, on the other hand, it is stipulated that incapacity for work must not commence before the expiry of the probationary period (which varies, according to the relevant career branch, between one year and a maximum of five years) or, where a candidate is immediately appointed for life, that he must not be incapacitated at the time of appointment.²⁰ Moreover, the regulations usually state that a generous approach – ultimately more so than with non-disabled persons – should be adopted with severely disabled persons so as to facilitate their integration. For this reason, a shorter predictive period applies to the severely disabled.

* Public- and private-sector employers with a staff of not less than 20 must appoint severely disabled persons to at least 5% of posts.

2.2.2. The right to question

Questions about manifest diseases with prognostic implications

The appointing authority can question an applicant about his health-related fitness either in a pre-employment interview or by means of a staff questionnaire, and indeed often does so. The questions concern such matters as current complaints, past illnesses (in particular, those affecting the heart, lungs [tuberculosis], liver, kidneys, digestive organs, thyroid, spine and limbs, mental illnesses, allergies and infectious diseases, surgical operations, accidents, periods spent in a hospital or sanatorium or at a health resort), regular medications, drug use, smoking, alcohol consumption and sporting activities; a familial history is often also taken (with questions about hypertension, nervous diseases, diabetes or other significant disorders in parents and siblings).²¹ However, it is evident that only superficial attention is often paid to the answers.

According to the decisions of the administrative courts, while not all health-related questions are permissible, those relevant to the specific decision on the appointment of a candidate are.²² The courts have not so far ruled on the limits of this right to question. However, on the basis of their statements about the criteria applied for the assessment of health-related fitness, it may be assumed that questions about the existence of prior diseases are deemed permissible even if the person's health is not currently impaired and the disorder is not relevant to the job,²³ as this is the only way to arrive at a prognostic decision on the candidate's future health status. At any rate, questions about whether the candidate belongs to one of the major groups affected by HIV and about sexual orientation have certainly been considered permissible with a view to deciding whether an HIV antibody test should be carried out.²⁴

It has even been held that it is incumbent on a candidate, as a part of his duty of cooperation, to release doctors who are treating or have treated him from their obligation of professional secrecy so that the medical officer can inspect his medical

records.²⁵ The limits of the duty of cooperation are deemed to be set by the candidate's personal rights.²⁶

Conversely, some authors consider that a balancing of interests comparable with that required by the Federal Labour Court (BAG) for the private sector should also be demanded in the law applicable to permanent civil servants. This would imply a balancing of the public-sector employer's interests deemed to be deserving of protection against the personal rights of the applicant enshrined in Article 2(1) in conjunction with Article 1(1) of the German Basic Law, including his right to informational self-determination. The requirement of equal treatment stipulated in Article 33(2) of the Basic Law, the prohibition of disproportionate measures and ultimately also the doctrine that there must be a specific statutory provision are also invoked. These authors therefore consider questions such as whether the candidate belongs to one of the major groups affected by AIDS to be impermissible.

Questions about predictive information

As to the decisions of the administrative courts, so far only the Darmstadt Administrative Court has ruled on the extent to which questions about genetic predispositions are permissible under the law applicable to permanent civil servants.²⁷ The Court does not consider that a question about a familial history of hereditary disorders infringes the candidate's personal rights. In its view, the necessary prognosis as to the future course of the candidate's health status can be made by the medical officer in accordance with the rules of the art only if he is able to take genetic predispositions into account. In this connection, the Administrative Court does not dispute the fact that questions about genetic predispositions constitute a far-reaching encroachment on the candidate's intimate sphere.

The Court's judgement follows the line established by the Munich Higher Administrative Court (VGH), which held, with regard to an HIV antibody test, that the applicant's current

physical state was not the only factor relevant to arriving at a probability-based assessment of his health-related fitness.²⁸

Specifically, the Court stated that the candidate could not be deemed to possess the necessary health-related fitness if his current health status suggested the possibility of the premature onset of occupational incapacity. Conversely, in the case of predispositions indicative of the possibility of the future occurrence of relevant disorders, the existence of the predisposition had to be established before it could be assumed that the candidate lacked health-related fitness. However, it could not be asserted that the predisposition existed if the probability of its existence was equal to the probability that it did not exist. Where the probability of development of a hereditary disorder was only 50%, it could not therefore be affirmed that the candidate had a predisposition on the basis of which the possibility of future illness or the occurrence of permanent occupational incapacity before attainment of the prescribed age limit could not be ruled out with a high degree of probability.²⁹

2.2.3. Pre-employment medical examinations

All candidates for appointment as civil servants for life must undergo a prior official medical examination³⁰ for determining current health status as well as, in the form of a long-term prognosis, for establishing whether premature incapacity for work on the grounds of ill health is likely. As stated, the crucial difference from the pre-employment medical examinations conducted in the private sector and elsewhere in the public sector is the addition of the element of the long-term prognosis – which is not specifically confined to the proposed activity with its particular demands and stresses.

Official medical examinations for the appointment of permanent civil servants in Germany are currently conducted by more than 440 health offices or special staff medical services, some of which apply prescribed examination profiles, for instance to establish fitness for particular occupational groups

and posts, such as in the fire service (fitness for using respirators or for diving into water), the police and judicial enforcement, work with certain chemicals, or work with VDUs. In addition, each Federal *Land* has its own individual administrative regulations that govern the scope of examination.

The situation of an official medical examination precludes an ordinary doctor-patient relationship; as a rule, there is no relationship of trust between the candidate and the doctor, because the results of the examination may have appreciable effects on the candidate's subsequent career. Information given by the examinee about his personal or familial medical history cannot usually be verified. However, the medical officers who conduct these examinations do not consider themselves responsible for delving further into candidates' histories to discover medical conditions and disorders. The information given by a candidate is questioned only if the examination reveals conspicuous adverse findings.

In the appointment of permanent civil servants, a public-sector employer, like his private-sector counterpart, is not provided with diagnoses. However, he receives a detailed description of the candidate's health status and prognosis, on the basis of which he can assess the candidate's health-related fitness.

The appointing authority is free to accept or reject the findings of the medical officer. The decision on engagement or appointment as a permanent civil servant is a matter for the recruiting institution, so that where appropriate the need for personnel may partly determine how strictly the criterion of health-related fitness is applied for the purposes of selection. Employers do not generally report back to the doctors working in the health offices.

The examination results are also supplied to the candidate, who as a rule receives a copy of the medical officer's opinion. Where a candidate is refused appointment as a permanent civil servant, he is advised that he can contest the decision by instituting proceedings before the Administrative Court. A consistent body of case law does not exist; cases are always decided

individually, and even persons whose health-related fitness is greatly restricted are sometimes appointed as permanent civil servants.*

Examination for manifest disorders with prognostic implications

Pre-employment examinations as a rule comprise measurement of height and weight, examination of the skin and mucosae, testing for cyanosis, dyspnoea and oedema, inspection of the oral cavity, pharynx and dentition, examination of the thyroid, testing of eyesight and hearing, examination of the thorax (X-ray), lungs, heart and circulation (including pulse and blood pressure), abdomen, liver, urinary and sexual organs (including urinalysis), spine, limbs and nervous system, and assessment of mental health.

Laboratory tests are widespread but not universal. As a rule, blood count, liver and creatinine values and urine status are determined. Serum lipid levels are not normally evaluated. More extensive technical tests of hearing and eyesight are conducted in some Federal *Länder* if the physical examination has indicated an impairment. However, detailed eyesight and hearing tests are essential for some occupational groups where fitness is a particular issue. The health offices seldom conduct ECGs. Lung X-rays and tests of pulmonary function are normally undertaken only if indicated by the physical examination.

A full self-reported medical history is usually taken, sometimes by means of structured questionnaires to be completed by candidates. In a few cases, the questionnaires are precompiled by

* For instance, the appointment of a 44-year-old salaried primary school teacher as a permanent civil servant was initially refused owing to an adverse prognosis of health-related fitness. She had a congenital dysplasia of the hip, suffered from slight hemiplegia and hypertension, and was taking drugs for impaired thyroid function. After petitioning the Bremen Administrative Court, she obtained her appointment as a permanent civil servant. In another case, an overweight 37-year-old teacher was refused appointment as a permanent civil servant even after litigation at the Administrative Court. Although the teacher, who was 169 cm (5 ft 6½ in) tall and weighed 99.2 kg (15½ stone or 218 pounds) (BMI 34.8), currently possessed unrestricted capacity for work, the prognosis of health-related fitness was negative owing to the possibility of sequelae.

the employer. The information requested includes, for example, details of current complaints, past illnesses, smoking/no smoking status, gynaecological problems and disorders in the family.³¹ However, the familial history is taken only as a guide and is usually kept relatively short; the incidence of cancer in the family is irrelevant to assessment of a candidate's fitness. Even if a woman knows that she has, for example, a hereditary predisposition to breast or ovarian cancer, this information is not normally used. The case featured in the media concerning a teacher's risk of developing Huntington's disease, as a result of which she was initially refused appointment as a permanent civil servant, is regarded as an exception.³²

An adverse health prognosis is given, for instance, in the case of chronic disorders with a foreseeably progressive or unpredictable course such as multiple sclerosis, severe mental illness (e.g. psychoses) or recent cancers. However, account is sometimes taken of the fact that the capacity for work depends on the specific activity and that some activities are perfectly compatible with certain disorders.

Although the courts have not yet ruled comprehensively on the legal limits applicable to pre-employment medical examinations, the Darmstadt Administrative Court has clearly indicated that general examinations by a medical officer, necessary for determination of a candidate's current health status and for making a reliable prediction in accordance with the rules of the medical art, are in principle permissible. The same applies, in the view of the Court, to supplementary examinations (including those by medical specialists), provided that the general examination indicates a specific need for them. Particular justification is necessary only where a candidate's intimate sphere or bodily integrity is permanently affected, by virtue of his personal rights. Apart from this, the Court holds that sufficient protection is guaranteed because the disclosure of the information obtained in the examination to third parties, and hence also to the future public-sector employer, is dependent

on the candidate's consent, as the medical officer is also subject to the obligation of professional secrecy.³³

Predictive tests

Existing risks or risk factors are taken into account by many medical officers in the context of the prognostic part of their assessment if they give rise to an increased probability of frequent illness or the onset of permanent incapacity to work before the prescribed age limit is reached. For instance, if a candidate is so overweight that the Body Mass Index (BMI) exceeds 30, a high risk of sequelae is considered to exist. Excess weight may also be regarded as a reason for a negative prognosis in terms of fitness for particular activities, unless a re-examination reveals a downward tendency. A strong suspicion, or confirmed diagnosis, of addictive disorders is also regarded as a risk factor. In some cases, high blood pressure is deemed, in official medical reports, to be a chronic disorder.

The proportion of reliably predictable or genetically diagnosable disorders is currently considered to be very low compared with the most frequent causes of premature incapacity for work (mental illnesses and behavioural disorders: 32%; conditions affecting the musculoskeletal system and connective tissue: approximately 18%; pathology of the circulatory system: about 14%³⁴).

D EVALUATION BY THE NATIONAL ETHICS COUNCIL

1. Initial situation and evaluation criteria

Medical genetics currently offers an increasing number of techniques for determining whether an individual carries genetic characteristics associated with diseases. They permit short- or long-term predictions of the probability of the occurrence, and sometimes also of the course, of diseases. The use of genetic tests in the world of work has been the subject of debate for many years now. In the past, the discussion centred on private employment relationships; it is only recently that attention has also come to be focused on issues of selection in the appointment of permanent civil servants.

Concerns about “genetic discrimination” are widespread and are reinforced by situations such as the conflicts mentioned earlier over appointment to the permanent civil service. Genetic diagnosis gives rise to worries about comprehensive genetic screening (e.g. using gene chip technology), stigmatization and discrimination, sometimes also affecting genetic relatives. Predictive genetic diagnosis is felt to be particularly problematic in the case of untreatable diseases. However, as shown in Section B, not only genetic but also other tests and examinations can generate predictive health information. For this reason, the potential for stress and abuse associated with the collection of data by genetic tests is not a particularity of genetic data. Nor is it justifiable for genetic information on possible pathology to constitute grounds for stigmatization and discrimination – e.g. in the case of positive HIV status. Hence the thesis of a rigid genetic “exceptionalism”, which assigns a fundamentally different status to genetic data from that of other medical information, is untenable.

Yet the predictive value of genetic tests is exceptionally high for a number of diseases. Furthermore, such tests permit more frequent and more precise statements about the health of

relatives than traditional tests and examinations. Again, inherited genetic traits are elements of a person’s biological constitution that persist for life. It is therefore understandable that genetic data are perceived differently from other medical information. This could imply unjustifiably unequal treatment of applicants for a post on account of genetic traits.

The prohibition of discrimination, whether on the grounds of genetic or non-genetic medical information, follows from the principle, which is firmly enshrined in our culture and constitution, of the equal value of all human beings irrespective of their medical status and hence also of their genetic predisposition. However, this does not mean that everyone must automatically be treated equally. Not every form of unequal treatment constitutes discrimination. For instance, it is taken for granted that pregnant women are excluded from certain activities involving exposure to pollutants or radioactivity. Hence discrimination exists only if unequal treatment is unjustified. For this reason, it is important to establish the grounds which may justify unequal treatment.

The question arising for the purposes of conclusion of a private-sector contract of employment or appointment as a permanent civil servant is how the collection and use of predictive information should be appropriately limited in order to ensure that no one is unjustifiably refused access to a post on account of his genetic predisposition or other findings with pathological implications.

The problems are not solved solely by making predictive diagnosis conditional upon a candidate’s consent. After all, an examinee is not necessarily consenting “voluntarily”, for he must consider the possibility of being turned down for the desired post if he refuses the required examination. Hence the need to establish in law what information about diseases of possible future onset a private- or public-sector employer may demand of an applicant, and what diagnostic techniques may be used by occupational physicians or public-sector medical officers in pre-employment medical examinations and applied by them as a basis for the assessment of health-related fitness.

A crucial problem of evaluation posed by the use of predictive health information for the purposes of employment in the private sector and appointment to the permanent civil service is the striking of a fair balance between the interests of the employer and those of the candidate. The employer wishes to recruit an applicant who is fit for the proposed post in terms not only of qualification but also of health and who will not be incapacitated by ill health in the foreseeable future. The candidate, on the other hand, wishes to have his prospects of obtaining the job subjected to as few limitations as possible and at any rate not to lose the job merely because he carries a quantifiable risk of developing a certain illness in the future. A fair balancing of interests in this case cannot in practice simply be derived from ethical or constitutional principles. For this reason, any specification of, say, time limits or probability thresholds, as necessary for the purposes of regulation, may appear arbitrary. However, it will be less so if the balancing is carried out on the basis of a consistent system of values and is guided by the form in which interests have been balanced in other social contexts.

Another relevant point in the present context is that, for structural reasons, employers enjoy greater flexibility of action than employees. Constitutional principles therefore overlap with and supplement private employment relationships. These relationships are to that extent also linked to the fair distribution of opportunity, the safeguarding of material subsistence and the guaranteeing of social participation.

2. Private-sector employment relationships

The basis for the balancing of interests must be the criteria enshrined in the current labour legislation. Accordingly, private-sector employment relationships are contracts governed by the principle of contractual freedom, so that employers are in principle free to decide whom to engage on the basis of what

information. However, the collection and use of the information must not encroach unjustifiably on applicants' personal rights. Where health data as yet unknown to the applicant himself are to be collected, his right to remain ignorant must also be allowed for. The balancing of interests must take account of the fact that employment relationships in our society are at the same time social relationships whereby fundamental life opportunities are allocated: access to employment is of paramount importance. For this reason, although the legal system in principle recognizes employers' freedom of decision, it restricts their discretion in the field of selection and recruitment by limiting the right to question and to demand medical examinations and by prohibitions of discrimination.

The National Ethics Council believes that some of the principles developed by case law need to be spelled out in greater detail, while others need to be corrected.

2.1. Information on a candidate's health status at the time of engagement

No one disputes an employer's right to select job applicants according to whether, at the time of engagement, they possess the physical, mental and health-related fitness necessary for the proposed activity. The employer bears an entrepreneurial risk and therefore has a justified interest in ensuring that the new employee is available without restriction for the duties he defines. Questions about a candidate's health status and medical examinations are therefore permissible where they are necessary in order to establish the applicant's fitness for the proposed activity at the time of engagement.

For assessment of the permissibility of medical examinations, the cause of a given disease having implications for an employee's duties is immaterial. From this point of view, infectious diseases, for example, should not be assessed differently from genetic disorders. In so far as medical examinations are

permissible, genetic techniques should at any rate not be ruled out a priori. Conversely, test and examination techniques are not necessarily unproblematic simply because they employ non-genetic methods. The issue here is the significance of the information and its importance for the individual concerned and possibly also for his family, and not the method whereby the information was generated. Hence the exclusion of genetic tests only is not an appropriate solution to the problem.

2.2. Information on a candidate's future health status

The question of whether employers should also have the right to select applicants on the basis of their predicted longer-term health status and its possible effects on their fitness for the job is more difficult to answer. As stated in Section C, the courts have hitherto accepted the use of predictive information to a certain extent. However, the case law is not very precise in this respect.

In the view of the National Ethics Council, clear distinctions must be drawn here. Employers rightly share the risk that an employee already engaged might become incapacitated by ill health, through the continued payment of wages or salary in the event of illness and through restrictions on dismissal on the grounds of ill health. The risk of illness is borne by an employer in the context of his general entrepreneurial risk even if the illness is partly occasioned by the employee's own actions – for instance, by smoking or the practice of dangerous sports. This sharing of the risk, which takes account of the paramount importance of a job, should not undergo a relative shift by the immediate exclusion of applicants who are perfectly fit in terms of health at the time of selection and merely carry an increased risk of becoming incapacitated by illness in the future.

Again, the accuracy and reliability of predictive health information is often very limited (see Section B). Reliable forecasts of likely diseases can be made only in a limited number of

cases even if genetic testing techniques are used. In most instances only probabilities can be predicted. Even if the prediction of a disorder is unequivocal, great uncertainty often attaches to its timing and to the severity of the symptoms. For this reason, the exclusion of applicants with an unfavourable health prognosis would often fail to achieve its aim, as they might not fall ill during the period of their employment contract, or be affected to an extent that impairs the performance of their duties, or indeed at all.

In the few cases in which a condition can be predicted in the long term with a high degree of probability, two points must be considered. First, the longer an employer can make use of an employee's services, the more reasonable it is for him to accept the risk of illness; and, second, in the event of an employee's permanent incapacity, a private employer can dismiss him on the grounds of ill health.

In the view of the National Ethics Council, a fair balance of interests between employer and applicant can be achieved by allowing the employer only limited access to information about an employee's future health status. The Council takes the view that the approach of the Federal Labour Court, according to which it is permissible to enquire only into circumstances "likely", if they occur, to give rise to incapacity for work "in the foreseeable future", needs to be further clarified and to be applied also to pre-employment medical examinations.

On the one hand, the collection and use of predictive and prognostic health information at the time of engagement should be confined, at objective level, to disorders or predispositions to disorders with a greater probability (more than 50%) of occurrence than of non-occurrence and having appreciable effects on the employee's capacity for work. On the other hand, with regard to time limits, it should be permissible to take account only of effects that may be anticipated within a period to be set by law or collective agreement. The usual probationary period of six months could be taken as a guide for establishing an appropriate period. Although an employment contract can

admittedly be terminated during the probationary period without any reason being given, the prognostic period of six months granted to employers is nevertheless significant, because a prediction that a disease will probably become manifest during the probationary period may have the consequence that a candidate is not engaged in the first place.

In practice, therefore, an employer's right to question and the scope of pre-employment medical examinations are essentially confined to the identification of pre-existing medical conditions in the person himself. Even if a genetic mutation that is certain to lead to the manifest occurrence of a hereditary disease (e.g. Huntington's disease) is found, the balance of probabilities is that it will not manifest itself within a six-month period. On the other hand, if, for example, a cancer or a myocardial infarction for which an applicant has already undergone treatment is likely to recur within the stated period, this might have implications for his engagement or non-engagement.

Conversely, on the basis of the principles set out above, even the results of routine medical tests for the assessment of general health status – e.g. of blood pressure or blood chemistry, or ultrasound examinations – must be disregarded. The taking of a familial history must also be ruled out. This can, as a rule, reveal at most a 50% risk in an applicant, which does not constitute a predominant probability that he himself will be affected in the future. Only in exceptional cases – for instance, if both parents suffer from a hereditary form of cancer (e.g. hereditary bowel cancer) – do children have an a priori risk of more than 50% of developing the disease. Even then, however, a prediction covering a period of, say, six months is not possible. Apart from this, a familial medical history yields information that encroaches on the personal sphere of the applicant and the members of his family in such a way that it cannot on any account be deemed to fall within the purview of the general informational interests of an employer.

For the purpose of establishing the balance of probabilities, all that needs to be determined is whether premature incapacity

for work is likely as a result of the relevant (specific) predisposition in the candidate. The (non-specific) basal risk, according to which every applicant has a certain probability of premature incapacity for work, should be disregarded.

Access to existing medical documents such as family doctors' medical records should be permitted only with the consent of the person concerned and only to the extent that the foregoing considerations allow prior diseases and predispositions to be taken into account.

2.3. Risks to third parties

More thoroughgoing examinations for currently symptom-free conditions or ones of predictable onset should be permissible only if they are necessary to preclude specific risks to third parties that are inherent in the nature of the activity (as in the case of pilots, bus drivers or kitchen staff). In certain circumstances, it should be possible for these examinations to be conducted even where the manifest occurrence of the disease is not likely in the foreseeable future or where the probability of its occurrence is not greater than that of its non-occurrence. In this situation, the principle of proportionality must be observed. From this point of view, for example, a test for susceptibility to convulsions (epilepsy) would be permissible in the context of an aeromedical fitness examination. Conversely, predictive genetic testing for a progressive degenerative retinal disease such as pigmented retinopathy would not be permissible, as deteriorating eyesight can also be identified early on at symptomatic level by regular tests.

2.4. Precautionary examinations

Examinations to determine the fitness of an applicant for a post must be distinguished from precautionary occupational-

medicine examinations intended to protect an applicant from health risks or directed towards the general care of an applicant's health. Contrary to current practice today, such examinations should be separated organizationally from pre-employment medical examinations and should ideally be conducted only after the conclusion of a contract of employment.

In some cases, however, it appears justifiable to make precautionary examinations a condition of appointment to a post – for example, if workplace hazards combine with specific susceptibilities in an applicant so that he is thereby placed appreciably at risk. Such susceptibilities may be wholly or partly due to genetic factors – e. g. where a post entails exposure to radiation, toxic substances or allergens, or in cases of glucose-6-phosphate dehydrogenase deficiency. In such instances, an applicant's individual susceptibility may adversely affect his fitness for the proposed post. Every reasonable effort must then first be made to control the source of the hazard and thereby to raise the level of industrial safety. The above principles governing the possible rejection of an applicant (i. e. that the susceptibility should be taken into account only if the balance of probabilities is that the disorder will become manifest within a specified period) should be applied only if this is not feasible. More extensive exclusions from engagement should be possible only as provided by the general rules of industrial health and safety and ought not to be subject to the individual discretion of the occupational physician or employer.

3. Public sector

The above principles should also apply to public-sector appointments of salaried employees and non-permanent civil servants. However, further consideration is necessary to determine whether they are also applicable to the situation of permanent civil service appointments.

Where a person is appointed as a permanent civil servant, the public-sector employer assumes a duty of care towards, and an obligation to provide for the welfare of, the civil servant that persist throughout his life. This obligation continues in the event of premature incapacity to work. Unlike a private-sector employer, who can dismiss an employee on the grounds of ill health, his public-sector counterpart lacks the possibility of terminating a permanent civil servant's contract if he becomes permanently unfit for work owing to illness.

In this situation, the public-sector employer has an understandable interest, when a candidate undergoes an official medical examination for the purposes of appointment as a permanent civil servant, not only in establishment of the candidate's current health-related fitness, but also in predictions of his likely future fitness.

However, here too a fair balance of interests must be struck. The employer's interest in obtaining a permanent civil servant who will remain capable of performing his duties for many years cannot claim absolute precedence over a candidate's interest in not being excluded from access to appointment as a permanent civil servant from the outset owing to an impairment of his health that is likely to arise only at some future date. As with private-sector employment contracts, the decision should be made on the basis of the degree of probability of a future health impairment and of the period within which the impairment may be expected. Current case law, too, is based on a judgement of probabilities, but rejects a candidate's appointment as a permanent civil servant from the outset if the risk of premature occupational incapacity cannot be ruled out with a high degree of probability. This means in practice that even an insignificant risk of premature incapacity suffices for exclusion from appointment as a permanent civil servant. In the view of the National Ethics Council, however, appointment to the permanent civil service, like the conclusion of a contract of employment in the private sector, should be refused

only if the balance of probabilities indicates premature incapacity (probability exceeding 50%). Nor should the taking of a familial medical history be permissible (see Section D 2.2.).

Where the reliability of the prediction is low, the public-sector employer should carry the risk of premature incapacity. This seems fair if it is borne in mind that, at 50% probability, the forecast event does not occur in half of all cases: every other affected candidate will be refused appointment as a permanent civil servant although he will never actually develop the predicted disease, so that such candidates will in practice be excluded for no reason.

Should the period within which a predicted disease, with the possible consequence of incapacity for work, must manifest itself be longer than the approximately six months proposed for the private sector? This point calls for further discussion.

The longer duration of a public-sector employer's obligation argues in favour of a longer period over which the future health-related fitness of a candidate may be taken into account for the purposes of the decision on whether to appoint him as a permanent civil servant. After all, a relatively long prediction period of five or ten years (variable according to the particular regulations governing permanent civil servants, which differ from one Federal *Land* to another) applies even to severely disabled persons, whose integration into the world of work is particularly desired. The existence of these provisions also shows that time limits on the period covered by a prediction are not foreign to the law governing the permanent civil service. Again, the prediction of a severe disorder that will eventually result in permanent incapacity for work may be almost as distressing to the person concerned as an actual severe disability.

On the basis of a five-year prediction period for all applicants for permanent civil service posts, which is in line with the provisions applicable to severely disabled persons in some Federal *Länder*, the results of predictive genetic tests are in practice immaterial, because it cannot as a rule be assumed that disorders detectable by a predictive genetic test will, on the balance

of probabilities, become manifest or indeed lead to significant incapacity for work within a five-year period.* In this situation, at most information on previous medical conditions suffered by the candidate will be significant in practice. Here there are indeed cases in which the disease may be expected to recur within five years.

Conversely, if a ten-year prediction period is adopted, a number of predictive genetic tests may become relevant in practice, as the onset of incapacity to work can then be predicted with greater probability. This is true, for example, of certain neurodegenerative conditions such as spinocerebellar ataxias, Huntington's disease, certain muscular disorders and familial cancers. In addition, the longer the prediction period, the greater the significance of prior diseases will be.

The following considerations argue in favour of the adoption of a five-year period:

It can be exceedingly distressing for a candidate to be confronted with information about an appreciably increased risk of future illness. The longer the prediction period, the more likely such a confrontation becomes. The same applies to the risk of exclusion from access to appointment as a permanent civil servant. These effects would be acceptable only if the use of predictive health information really were an appropriate means of protecting a public-sector employer's legitimate interest in avoiding the financial burden of premature incapacity for work. Although this burden is in fact appreciable, only a negligible proportion of it is attributable to disorders that can be predicted at the time of a candidate's appointment as a permanent civil servant. Psychological and physical disturbances due to the interaction of lifestyle and occupational stresses are more likely to predominate in this respect. Predictive tests and prognoses cover only a small number of relatively arbitrarily

* For example, a person may have more than a 50% risk of illness if both parents carry the same dominant pathogenic gene. In this case the lifelong risk of illness in that person is up to 75%. However, even in these cases it will as a rule be impossible to predict that the disease will, on the balance of probabilities, become manifest in the next five years.

selected persons for whom such predictions are possible in accordance with the present state of the art of medicine, including that of genetic diagnosis. Exclusion based on such predictions is not a suitable means of significantly reducing the number of early retirements on health grounds and the consequent drain on the public purse. However, the affected candidates would be hit particularly hard. This suggests that it should be permissible for predictive and prognostic health information to be demanded and used only in the case of conditions and predispositions with more than a 50% probability of having a non-negligible effect on an applicant's health-related fitness within the next five years. There should be no obligation to disclose information without a request to that effect.

It is permissible for more demanding health-related requirements to be imposed for appointment to the permanent civil service than those permitted by the private-sector labour legislation. If the law governing the permanent civil service were brought into line with that applicable to the private sector, as advocated in various circles, this might also entail an approximation of the conditions for engagement and hence diminish the importance of predictive health information.

E CONCLUSIONS AND RECOMMENDATIONS

Not only genetic but also other diagnostic methods can be used to establish shorter- or longer-term probabilities of the occurrence and course of diseases. In this respect, predictive genetic tests do not differ fundamentally from other methods.

Forecasts of diseases may be either prognoses or predictions. A prognosis is defined as a statement about the future course of a past or current disorder, while a prediction concerns the risk of a disease that has not yet become manifest. Although the various forms of forecasting differ according to their time horizon and precision, they pose comparable problems for the engagement of both private-sector employees and permanent civil servants.

1. It is legitimate for an employer, when deciding whether to engage an applicant, to consider whether, at the time of engagement, the applicant possesses the physical, mental and health-related fitness necessary for the proposed activity. This means that at least questions about the job-related health status of an applicant at the time of engagement are permissible and must be answered truthfully by the applicant. Medical examinations and questions about an applicant's prior personal medical history are likewise permissible provided that they are necessary to establish that the applicant is fit for the proposed activity at the time of engagement.
2. In the selection of applicants, only limited use of information on diseases or predispositions that might not affect fitness until some time in the future should be permissible. The only information it should be possible to use concerns diseases and predispositions that will, on the balance of probabilities, have a non-negligible effect on an applicant's fitness for the post in question within a period after engagement to be set by law or collective agreement (e.g. on the basis of the usual

- six-month probationary period). An applicant's obligation to answer questions by the employer or examining physician truthfully should be confined to this information.
3. On the basis of the conditions set out above, the taking of a familial medical history for the purposes of pre-employment medical examinations is impermissible, because it cannot furnish sufficiently reliable information on the variation of a candidate's health-related fitness over a period of six months after engagement.
 4. Similarly, medical examinations directed towards future fitness should be permissible only if they relate to disorders or predispositions that will, on the balance of probabilities, have a non-negligible effect on an applicant's fitness for the relevant post within the above period after engagement. Such examinations should not be permissible for screening purposes, but only where a specific reason exists for suspecting the presence of such a disorder or predisposition. This precludes the application in pre-employment examinations of a number of routine medical methods of evaluating a patient's general state of health.
 5. More thoroughgoing examinations for currently symptom-free or predictable conditions are permissible if they are necessary having regard to the principle of proportionality in order to preclude specific third-party risks inherent in the nature of the activity (e.g. in the case of pilots, bus drivers or kitchen staff).
 6. The cause of a disorder is immaterial to assessment of the permissibility of all the medical tests and examinations mentioned in the previous recommendations. In this respect infectious diseases, for instance, should be judged no differently from those with genetic causes.
 7. The conduct of medical examinations must in all cases be subject to the examinee's consent.
 8. The only information the examining doctor may impart to the employer is whether the applicant is fit for the proposed post. Specific results must not be divulged to an employer.
 9. Pre-employment statutory or regulatory examinations carried out for precautionary occupational-medicine reasons – i.e. to protect workers from workplace-related health hazards – are unaffected by the above considerations.
 10. Precautionary examinations over and above those prescribed by law should not be undertaken on recruitment and used for assessment of an applicant's fitness. However, tests for specific susceptibilities to risks associated with the proposed post (e.g. exposure to certain substances or noise) may be in applicants' interests. Applicants should therefore be informed of their entitlement to have such tests conducted by a doctor of their choice, to enable them to decide whether to persist with their application for the post should a risk be established.
 11. The principles set out above cannot be applied without reservation to the appointment of permanent civil servants. In this instance the public-sector employer assumes a duty of care towards, and hence an obligation to provide for the welfare of, a civil servant that persist throughout his life (even in the event of premature incapacity for work). For this reason, the interest of the public-sector employer, and hence also of the public at large, in a long-term prediction of an applicant's fitness for work is more deserving of recognition than the corresponding interest of an employer subject to the private-sector labour legislation, who does not have to bear the risk of permanent incapacity for work in the same way.

12. Nevertheless, it seems inappropriate to exclude from eligibility for appointment as permanent civil servants the small number of persons for whom technical advances in medicine, including progress in genetic diagnosis, may permit a long-term prediction of future incapacity for work. While the exclusion of such candidates would not appreciably reduce the number of early retirements, it would be particularly distressing for the affected group.
13. By analogy with the regulations applicable in the individual Federal *Länder* to the appointment of severely disabled persons as permanent civil servants, it should be permissible to demand and use predictive and prognostic information only if it relates to disorders or predispositions that will have non-negligible effects on an applicant's health-related fitness in the next five years.
14. Except as regards the above-mentioned particularities of the legislation governing permanent civil servants, all the principles enumerated with regard to private-sector employees apply equally to the appointment of permanent civil servants. This means that predictive and prognostic health information may be demanded and used only if it relates to disorders or predispositions with more than a 50% probability of having non-negligible effects on a candidate's health-related fitness within the next five years.

- 1 VG Darmstadt [Darmstadt Administrative Court], 24 June 2004, Case 1 E 470/04 (3). See also Section C 2.2 of this Opinion.
- 2 Information supplied by Deutsche Huntington-Hilfe.
- 3 LfAS [Bavarian Land Office for Safety at Work, Occupational Medicine and Safety Engineering]: <http://www.lfas.bayern.de/>
- 4 Ibid.
- 5 The following information on practice in this field is partly based on the expert hearing held by the National Ethics Council on 21 July 2004.
- 6 BAG [Federal Labour Court] NZA 1985, 57.
- 7 BAG [Federal Labour Court] NZA 1985, 57, 57 with further references.
- 8 Bekanntmachung der Bestimmungen über die Anforderungen an die Tauglichkeit des Luftfahrtpersonals (JAR-FCL 3 deutsch) [Announcement of the provisions governing the fitness requirements for flight crew (JAR-FCL 3 German)] of 15 April 2003 (published in the Bundesanzeiger, No. 81a, on 30 April 2003).
- 9 BVerwG [Federal Administrative Court] ZBR 1963, 215, 215; BVerwG, reproduced in Buchholz 232 Section 31 BBG [Federal Law on Permanent Civil Servants] No. 39; BVerwG, reproduced in Buchholz Section 7 BLV [Federal Order on Permanent Civil Servants' Careers] No. 4.
- 10 BVerwG [Federal Administrative Court] ZBR 2002, 184, 185; BVerwG, reproduced in Buchholz 232 Section 31 BBG [Federal Law on Permanent Civil Servants] No. 39; for EU staff, see CFI, 3rd Chamber, 18 September 1992, Case T-121/89.
- 11 VGH München [Munich Higher Administrative Court] NJW 1989, 790, 791.
- 12 VG Ansbach [Ansbach Administrative Court] NJW 1988, 1540, 1541.
- 13 See Section 42 of the Federal Law on Permanent Civil Servants (BBG).
- 14 VwV des Sozialministeriums über amtsärztliche Untersuchungen im öffentlichen Dienst [Administrative Regulations of the Ministry of Social Affairs on Public-Sector Official Medical Examinations] of 29 July 2003 (GABl., 30 September 2003, p. 598), No. 3.4.
- 15 Fürsorgeerlass des Bayerischen Staatsministeriums der Finanzen [Care Decree of the Bavarian State Ministry of Finance], June 2002, No. III.8.3.
- 16 Richtlinien über die Einstellung Schwerbehinderter in der Landesverwaltung [Directives on the Employment of Severely Disabled Persons in the Land Administration], 1990, No. 1.9.
- 17 Richtlinie zur Integration schwerbehinderter Angehöriger des öffentlichen Diensts [Directive on the Integration of Severely Disabled Public-Sector Staff], 29 January 2002, No. II.2.b.
- 18 Runderlass des Ministers für Arbeit, Gesundheit und Soziales des Landes Nordrhein-Westfalen [Circular of the Minister of Labour, Health and Social Affairs of the Land of North Rhine-Westphalia], 30 May 1988, MBl. NW 1988, p. 904.
- 19 VwV des Sächsischen Staatsministeriums für Soziales zu Gutachten und Zeugnissen der Gesundheitsämter in Personalangelegenheiten des öffentlichen Dienstes [Administrative Regulations of the Saxon State Ministry of Social Affairs concerning Reports and Certificates of the Health Offices in Public-Sector Staff Health Matters], 8 December 2003, ABl. 2004, p. 10.

- 20 VwV zum Niedersächsischen Beamtengesetz [Administrative Regulations for the Permanent Civil Servants Law of Lower Saxony] (2000), re Section 8.
- 21 See Annex 1 to the VwV des Sozialministeriums über amtsärztliche Untersuchungen im öffentlichen Dienst [Administrative Regulations of the Ministry of Social Affairs on Public-Sector Official Medical Examinations] of 29 July 2003 (GABl., 30 September 2003, p. 598), No. 3-4.
- 22 OVG Mecklenburg-Vorpommern [Mecklenburg-Western Pomerania Higher Administrative Court] DöD 1999, 43.
- 23 For a decision along these lines, see, for example, VGH München [Munich Higher Administrative Court] NJW 1989, 790, 791.
- 24 VGH München [Munich Higher Administrative Court] NJW 1989, 790, 792; lower court: VG Ansbach [Ansbach Administrative Court] NJW 1988, 1540, 1541.
- 25 OVG Mecklenburg-Vorpommern [Mecklenburg-Western Pomerania Higher Administrative Court] DöD 1999, 44.
- 26 VG Darmstadt [Darmstadt Administrative Court], judgement of 24 June 2004 – 1 E 470/04, p. 7.
- 27 VG Darmstadt [Darmstadt Administrative Court], judgement of 24 June 2004 – 1 E 470/04, p. 3.
- 28 VGH München [Munich Higher Administrative Court] NJW 1989, 790, 791.
- 29 VG Darmstadt [Darmstadt Administrative Court], judgement of 24 June 30
- 30 See VwV-LBGBW [Administrative Regulations for the Baden-Württemberg Land Law on Permanent Civil Servants], re Section 11 LBGBW.
- 31 See, for example, Annex 1 to the Verwaltungsvorschrift über amtsärztliche Untersuchungen im öffentlichen Dienst Baden-Württemberg [Baden-Württemberg Administrative Regulations on Official Medical Examinations in the Public Sector]; Annex 1 to the Verwaltungsvorschrift des Sächsischen Staatsministeriums für Soziales zu Gutachten und Zeugnissen der Gesundheitsämter in Personalangelegenheiten des öffentlichen Dienstes [Administrative Regulations of the Saxon State Ministry of Social Affairs concerning Reports and Certificates of the Health Offices in Public-Sector Staff Health Matters].
- 32 Expert hearing, National Ethics Council, 21 July 2004.
- 33 VG Darmstadt [Darmstadt Administrative Court], judgement of 24 June 2004 – 1 E 470/04, p. 3.
- 34 Gesundheitsamt Bremen [Bremen Health Office], ongoing evaluations.

The members of the German National Ethics Council

Kristiane Weber-Hassemer,
Former Permanent Secretary of Justice in the State of Hesse (Chair)
Prof. Dr Jens Reich (Deputy Chair)
Prof. Dr Eberhard Schockenhoff (Deputy Chair)
Dr Hermann Barth
Prof. Dr Wolfgang van den Daele
Prof. Dr Horst Dreier
Prof. Dr Eve-Marie Engels
Prof. Dr Detlev Ganten
Prof. Dr Volker Gerhardt
Prof. Dr Regine Kollek
Christiane Lohkamp
Prof. Dr Martin J. Lohse
Auxiliary Bishop Dr Anton Losinger
Prof. Dr Eckhard Nagel
Prof. Dr Therese Neuer-Miebach
Prof. Dr Christiane Nüsslein-Volhard
Prof. Dr Peter Propping
Heinz Putzhammer
Dr Peter Radtke
Prof. Dr Bettina Schöne-Seifert
Dr Jürgen Schmude, Former Federal Minister
Prof. Dr Dr h. c. Richard Schröder
Prof. Dr Drs h. c. Spiros Simitis
Prof. Dr Jochen Taupitz
Dr Christiane Woopen

Staff of the secretariat

Carola Böhm
Dr Katja Crone
Ulrike Florian
Dr Rudolf Teuwsen MA
Andrea Weichert
Dr Christina de Wit

