Disability Pension

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A Treaty in Insurance Medicine

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Cambridge Scholars Publishing

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This book first published 2025

Cambridge Scholars Publishing

Lady Stephenson Library, Newcastle upon Tyne, NE6 2PA, UK

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

ISBN: 978-1-0364-4801-1
ISBN (Ebook): 978-1-0364-4802-8

To my supportive family,

Viorel, Mina and Oana

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FOREWORD

This treaty is the result of an effort to understand and explain the concepts in the field of the insurance medicine, especially the social medicine.

A big Thank you to all my colleagues from EUMASS, ICLAM and the Romanian societies of medical expertise, who have helped along this journey.

Mostly I want to thank the publishing team from Cambridge Scholars Publishing, who have encouraged and helped me to produce this book, a tool that I hope will be useful to all those who want to learn and practice in this domain.

—Ioana Soare

INTRODUCTION

The insurance medicine allows a complete assessment of the patient, both now and as risks in the future, based on the statistical tables. These statistical limits of the body's structural or functional parameters, as well as the data obtained through the evidence-based medicine, were identified in the Caucasian (especially Anglo-Saxon) populations and led to the standardization of the patient assessment (e.g. the tables for spirometry, ECG, EEG, BMI, the risk calculation tables in the arterial hypertension or the diabetes, etc..).

In medicine, today, we know what the future holds. We can say with 70-80% accuracy, what life span we expect a person to have and what disease predispositions they have, based on the life expectancy calculated in the respective population and the risks of having certain conditions, personal risks (genetic, related to eating habits or sports), risks related to the profession and others.

How much the science has evolved! NO. These things were known from the year 1700, if not from the year 1600, by the Anglo-Saxon populations, based on the town halls civil status registers.

The insurance, in various forms, is very old and relates to a tendency towards stability, security and lack of worry about tomorrow, natural desires. The first documented attestations date back to the time of the Egyptians, Phoenicians and the Chinese, who also had a form of insurance in trade. Romans also had the notion of pension, annuity.

At first only the healthy people were insured. The insurance for individuals with various conditions only became possible in 1919, through the use of a substandard risk classification system.

In the last 40 years medicine has begun to take these notions into account, and thus the classifications and the risk stratifications for high blood pressure and diabetes have emerged. Only so the study of the **evolution** and **prognosis** of the diseases, the avoidance of the events (for example vascular accidents, some complications), the **extension of the life span** and above all the addition of quality-adjusted life year (QALY) were of greater importance, compared to the treatment of the diseases only. DALY, Disability Adjusted Life Years is an important statistical tool also. The

Evidence Based Medicine EBM appeared because of the need in insurance medicine to quantify, to precisely evaluate the functional deficit of the patient.

All these elements have moved from the statistics to medicine, because of the insurance companies. The money dictated order.

The disability assessment is the biggest and most challenging part of the insurance medical expert's activity.

This treaty will tackle the difficult aspects of the definitions, a comparison of criteria for patient evaluation, some aspects of the risks, the evolution and the prognosis.

The Chapter Brain Tumors Presumed Malignant Without Biopsy - Evaluation and Treatment Problems, was first published in a reduced form as an article in Austin Journal of Clinical Neurology, Volume 8 Issue 2-2021. The Chapter Rehabilitation for visually impaired people was first presented at the Conference: Family Medicine, the Cornerstone of Modern Medicine, 15th Edition, Volume of summaries, September 5-7, 2024, Etna Medical Publishing House, ISBN 978-630-6644-03-2.

In separate chapters, we discuss the disability from accidents (both work and road accidents) and the work-related diseases.

In the last chapter we debate the ethics. Is it ethical to hire an insurance medical expert in an insurance company? Can or may the hired physicians represent the best interesses of the patient? Should the medical expert be independent?

—Ioana Soare

PART 1

GENERAL INFORMATION

CHAPTER 1

NOTIONS USED IN INSURANCE MEDICINE

IOANA SOARE

Insurance is a means of protection against the financial loss [1]. An entity that provides insurance is known as an insurer, insurance company, or insurance carrier. A person or entity that buys insurance policies is known as an insured [1].

The insurance transaction involves: the insured assumes a relatively small guaranteed loss, known as a payment to the insurer, in exchange for the insurer's promise to compensate the insured in the event of a loss. The loss may not be financial in nature, but must be reducible to a financial point of view and must involve something in which the insured has an established insurable interest - property, possession or a pre-existing relationship [1].

The insured receives a contract, called an insurance policy, which details the terms and circumstances under which the insured will be financially compensated. The amount of money charged by the insurer from the insured, for the coverage set out in the insurance policy, is called premium (noun with psychological connotation) and is actually a rate payable periodically from the contract value. If the insured suffers a loss that is potentially covered by the insurance policy, the insured submits a claim to the insurer.

Social security - represents a social insurance program, supported by the state, which provides social protection against the factors that affect the well-being and the economic security of the population - poverty, old age, disability, lack of a job, etc... [2].

The social security provides basic coverage for the risks "sickness/ maternity/disability/death", "work accidents/occupational diseases", "old age" and "family". They cover different areas: the general regime, the agricultural regime and other special regimes. This also includes the social assistance, which supports the most disadvantaged.

The social insurance/social benefits are based on the principle of solidarity and contribution (in Romania, France, Germany - not in the UK, where the benefits are fixed amounts). All citizens have the same rights (the contracts are identical, not negotiable), binding on the territory of a country and guaranteed by the state. This includes the **medical leave** (short term sick leave), the **disability pension or benefit** (the long-term sick leave), the **survivor's pension**, the allowances and benefits for people with special needs (handicap), as well as others that are not the subject of the insurance medicine - the unemployment benefit, the death benefit, etc... [2,3]. To be detailed in the next chapter.

Adaptive incapacity/disability - represents the reduction of the possibility to perform a motor or cognitive activity, under conditions considered normal, due to the inherited or acquired deficiencies [2]. Can be defined also as any impairment that limits a person's ability to perform a certain activity (activity limitation) or interact with the environment (participation restriction). Two people with the same type of disability can be affected in very different ways [2,4].

Annuity - the companies that sell us annuities are betting on our lives - they are gambling. The annuities appeared in Roman times and were used by the town halls or kingdoms (England, Holland) to collect money.

The individual pays a fixed amount, for a number of years, and then receives regular payments for the rest of his live. If he dies before a company has paid the full value of the purchase price, the company makes a profit. If the individual lives longer, the company loses. The company averages all buyers and its profit is regulated by law to prevent abuse.

Edmund Halley made a study of the registers of the city of Breslau around the year 1700. He calculated the annual rate of deaths and births, drew up tables like Graunt's, used to calculate the annuities and the life insurance amounts. Consequently, the predictions could be made about the future by calculating the age at which a man might die [1].

Deficiency - the functional deficit - represents any disruption of the body's structure and/or of the normal physical or mental functions [4].

Disease - represents the organic or functional modification of the body's normal balance; the pathological process affecting the body; the illness, sickness, affection; the disturbance of the normal state of an organism [4].

Disability is a generic negative term for the impairments, activity limitations and participation restrictions. It denotes the contextual factors (environmental and personal factors) [2,3,4].

Disability- The Merriam Webster Dictionary proposes the following definition: the temporary or permanent state of being unable to work due to illness or injuries. The Cambridge Dictionary proposes: the condition of being unable to work because of health problems, and receiving money from a government or organization because of this. To be detailed in the next chapter.

Doctrine of chances by Reverend Bayes. How can we use the probabilities to measure the probability of not being wrong, when trying to predict a particular event? His method can guide us when our intuition is wrong. For example, suppose you are testing for a rare cancer with an incidence of 1% in the population. The test comes out positive. The test gives 21% false positive results. How likely are you to have cancer? Most people would answer that if the reliability of the test is 80%, then that is the probability. Using Bayes' formula, the correct probability is only 5% [1].

Gaussian curve, of the normal distribution of the random observations, is the basis for estimating the value of the data. The business people use it to plan the business development, the politicians to determine policies, the teachers to grade the students, the pollsters to analyze their data and make predictions, the medical researchers to test the effectiveness of various treatments, the economists to analyze the economic performance, the biologists to study the plant growth, the psychologists to analyze the human behavior, and the insurance companies to set their insurance premiums [1].

Handicap - represents a social disadvantage, resulting from a physical, mental or sensory deficiency, which affects and limits the persons normal social role, in accordance with age, sex, its environment [4].

Health - is defined by WHO as a state or feeling of well-being from a physical, mental and social point of view, not just the absence of disease. May be defined as a state of an organism untouched by any disease, in which the functioning of all organs is normal.

Invalidity - Invalid means not valid/ not normal, not a whole, bodily infirm. This word was used since the wars, especially the First World War, mainly for the soldiers returning home without some bodily parts. Represents also a person enfeebled by illness or injury [4].

In some countries, invalidity matches disability, but some consider an invalid as a person with disabilities, who is retired (long-term sick leave), as in Romania.

Life expectancy - John Graunt, born in 1620 in London made a study: Natural and political observations based on the obituaries - concerning the fertility, health, diseases, longevity, the ratio of sexes and the ages of mankind. Based on this statistical study, he published the Statistical Table of Life Expectancy, the basis of the life insurance industry, of the medical statistics and the demographic, the government statistics (the political arithmetic). The Dutchman Christiaan Huygens introduced the notion of Hope (hopeful gain) [1].

Life expectancy: The insurance companies look at it as a bet on the customer's lifetime (guesstimation). It is estimated a posteriori, because the probability values corresponding to various events have been determined by the objective process of counting outcomes in real-world experiences [10].

The Bernoulli family of mathematicians from Basel, Switzerland were involved in the probability theory. In 1713, the idea that a man could plan his life in a rational way, that minimized risk and maximized opportunity, was widely accepted. It was and it is done based on how to calculate the probabilities of the future events. Graunt's life expectancy tables and N. Bernoulli's use of probabilities in courts of law provided a numerical measure of a person's confidence in knowing a particular event [1].

The utility measures the significance of a particular outcome to a particular individual. It is a subjective notion, compared to the notion of hope, which is a mathematical notion.

Life insurance - represents a type of insurance through which the insurer pays a sum of money after a preset period or upon the death of the insured person [6].

Long-term care insurance - the insurance that refers to the payment of a monthly amount, in the event of the need for care over 60 days, for patients who cannot serve themselves. It represents a variety of social and health services provided for a period ongoing or extended, to people who need assistance, due to mental or physical disabilities [6].

The patient's circuit is the path taken by him from the moment of the first consultation with the doctor, for the purpose of diagnosis, his orientation towards medical, social and educational services, until the completion of the treatment and his integration into the community. For example, in rare diseases, we have an average of 7 YEARS until diagnosis, although in more than 50% of cases, the motor or sensory changes appear in the adulthood - the patients actively participate and are interested in solving their problem.

Quality of life (QoL) - holistic concept in order to be able to quantify and analyze the 4 dimensions of the health status:

- the physical condition and performance;
- the psychological well-being (self-esteem, cognitive performance, interpersonal relationships);
- the positioning and social relations;
- the economic status.

The quality of life - in the sense of the WHO definition, means the perception of individuals on their social situations, depending on their own needs.

Recovery - is a complex field of activity, medical, educational, social and professional, which aims to restore as fully as possible the functional capacity, lost or undeveloped by an individual, following an illness or trauma, as well as the development of the compensatory mechanisms to ensure, in the future, the possibility of working or self-serving, respectively an independent life from an economic and/or social point of view (WHO definition) [4].

The recovery plan - implies a multidisciplinary team; provides periodic evaluations for the reanalyze of therapeutic needs, according to the age; supports the patient throughout his life; it is mandatory by law (eg Law 360/2023 in Romania) for patients who receive social insurance rights. It contains medical actions, professional actions (reduced schedule, job adaptation, retraining) and social actions (discussions with the family, etc.) [4].

Return to work - RTW, established expression, which refers to the return to work of an employee, who was ill - the rehabilitation/ recovery of the work capacity [5].

Special educational requirements - the specific requirements or needs regarding the education, for the equalization of opportunities in the school and the social integration. These requirements are the consequences of a functional deficit, of some poor psycho-affective, socio-economic or life conditions, placing the individual in a state of difficulty in relation to his peers, not allowing him to make the most of his intellectual and aptitude potential, inducing a feeling of inferiority.

Work capacity - expresses a relationship between the morphological and functional potential, and the demands of the work, on the other hand [4].

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CHAPTER 2

DISABILITY

IOANA SOARE

The people with disabilities represent a major political and social objective all over the world. This disadvantaged category needs protection and integration into the society by implementing an improved legislative framework for the social insurance system [1].

The disability insurance or the life insurance policies provide an income replacement, when the insured is disabled because of accident or sickness.

The WHO defines it as follows: “Disabilities is an umbrella term. The disability is reflecting an interaction between the characteristics of a person’s body and the particular features of the society, in which the individual lives" [2].

Disability - Limitation in people’s activity due to health conditions, for at least the past 6 months [EU].

Some consider the disability tied to the work capacity.

The USA Social Security Administration defines the disability in terms of inability to perform a substantial gainful activity (SGA), by which it means “work paying minimum wage or better”. The agency pairs SGA with a "listing" of medical conditions that qualify individuals for the benefits.

Disability can be defined in the insurance contracts in a number of different ways. These are:

- The inability of the insured to perform the duties of his or her occupation,
- The inability of the insured to perform the duties of any occupation for which he or she is fit, on the basis of experience, education, or training and

- The inability of the insured to perform any kind of work [3,5].

The disabled people require some protection measures in support of the social recovery and integration [5].

A kind of "people first" terminology is also used in the UK, but more often in the form "people with impairments". However, in the UK, the term "disabled people" is generally preferred to "people with disabilities". It is argued under the social model, that while someone's impairment (e.g. having a cataract) is an individual property, "disability" is something created by external societal factors, such as a lack of wheelchair access to their workplace. The term "disabled people" as a political construction is also widely used by international organizations, such as Disabled Peoples' International (DPI) [3].

Two conceptual models are more important in understanding the disability:

The medical model of disability

This model presents the disability as a problem of the person, directly caused by some health conditions. In the medical model, the management of the disability is aimed at a "cure", by the individual's adjustment and the behavioral change. For this type of perceiving disability, the principal response at the political level is that of reforming the healthcare policy [1,4].

The social model of disability

The issue of "disability" is seen as a socially created problem and a problem of the full integration of individuals into the society (see Inclusion (disability rights)). In this model, the disability is not an attribute of an individual, but rather a complex collection of conditions, many of which are created by the social environment. Hence, the management of the problem requires social action and is the collective responsibility of the society at large, to make the environmental modifications necessary for the full participation of the people with disabilities in all areas of the social life. The issue is both cultural and ideological, requiring an individual, community and a large-scale social change. From this perspective, the equal access for someone with an impairment/ disability is a human rights issue of major concern [3].

People can acquire disabilities at any point in their lives. Of critical importance is the ability to develop or maintain a high quality of life after the acquisition of a disability [3].

Conclusions

The term disability includes the imbalances, the limitations, the restrictions of the patients in their daily life.

Each country applies its national criteria under their legislation, when to decide the degree of disability, thus including or excluding people in this category, for political reasons.

Many insurance companies have also some lists of possible diseases, which quality for the disability benefits.

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PART 2

EXPLAINING PENSIONS

CHAPTER 1

HISTORY

IOANA SOARE

Social security represents the state assistance to those lacking in economic security and welfare, e.g. the aged and the unemployed.

- **social insurance**, where people receive benefits or services in recognition of contributions to an insurance scheme. These services typically include the provision for retirement pensions, the disability insurance, the survivor benefits and the unemployment insurance.
- **income maintenance**—mainly the distribution of cash in the event of interruption of the employment, including the retirement, the disability and the unemployment.
- **services** provided by the administrations responsible for the social security. In different countries this may include the medical care, the aspects of social work and even the industrial relations.

More rarely, the term is also used to refer to **basic security**, a term roughly equivalent to access to basic necessities—things such as food, clothing, shelter, education, money, and medical care [1].

Social security is primarily a social insurance program providing social protection. Social security may refer to recognized conditions, including poverty, old age, disability, unemployment and others.

- **700 BCE** - The first insurance funds, in close connection with the maritime trade - Rhodes - some groups of merchants whose goods were part of a common transport, paid a sum of money, which was collected in a common fund, and this was used in case the goods of one of them was damaged or lost during the voyage [2].
- **600 BCE** - The first life insurances appeared in Ancient Greece and Rome. The tradesmen's guilds, called "benevolent societies", initiated common funds, used when one of the members died, with the aim of supporting his family.

- **1310** AD, the Duke of Flanders decided to establish the Insurance Chamber in Bruges for insurance against the maritime risks.
- **1601**, in London, the Parliament developed the regulations regarding this activity, by issuing the "Law on insurance policies used between traders" [2].
- 1688 - one of the first insurance companies in the world, Lloyd's was founded in England. The first life insurances were made for sailors.
- 1830 -In Romania, the first sickness pensions were granted for the wounded soldiers, the war invalids. They obtained the first invalidity pensions, which were regulated by the Organic Regulation, just like in Russia and Germany, France. Then the civil servants, miners, and after 1900 other categories of workers received social protection [3].
- **1883** - Germany enacted a compulsory sickness insurance law [1].
- **1889** - Germany enacted the compulsory old age insurance -which included the invalidity insurance - **the Bismarck law**, the first official pyramidal system financed by a tax on workers [4]. The other countries followed, maintaining this system till today. Because of the ageing population, the pyramidal scheme is very difficult to sustain. Unlike the Accident Insurance and the Health Insurance programs, this program covered from the start Industrial, Agrarian, Artisans and Servants. The Disability Insurance program was intended to be used by those permanently disabled [3,4].

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CHAPTER 2

PENSIONS

IOANA SOARE

Europe had to wait for more than 100 years to modify this system. In the last 30 years, the European Union was born and has developed its structures. The language and the legislation needed harmonization, not the least in the field of the insurances. In 1987 - Geneva Association for the Study of Insurance Economics launched a research program called The Four Pillars" [1].

- First Pillar - the "State" pension, with mandatory contribution as a percentage of the salary, is based on a Bismarck-type pyramid system, without accumulation, interest, and is guaranteed by the state. The funds accumulated this month are consumed next month. The rulers of Europe did not know how to abandon this outdated system and make the transition to something else. That is why they introduced pillar 2, 3 and 4 in the EU [2].
- The Second Pillar - the mandatory private pension - Mandatory pension, withheld from salary, with both state and private managed funds. At the legal retirement age, the individual will receive a monthly amount, calculated on the basis of his contributions and the contract concluded with an insurance company, a standard contract, non-negotiable [2].
- Third Pillar - the private pension - Optional, private pension - the individual can join any private pension fund, which will manage the money independently. At the legal retirement age, the individual will receive either a monthly amount, calculated by the insurance company and included in the contract, or a total amount, included in the contract, which represents the initially agreed amount plus interest and the return on the investment made by the insurer. These funds are exclusively privately managed, but both the employee and the employer benefit from tax deductions. The disability and death clauses are included [2].

- 4th Pillar - optional, private pension and life insurance - It is actually a private life insurance with a pension component. The life insurance has a health insurance component (covers the sick leave, hospitalizations, accident disability pension, death) and a pension component managed by an investment fund. At the legal retirement age, the individual will receive either a monthly amount, calculated by the insurance company and included in the contract, or a total amount, included in the contract, which represents the initially agreed amount plus interest and the return on the investment made by the insurer. The health insurance part is not cumulative - it is money that the individual gives each year and does not get back - as with state health insurance [2].

The Treaty from Lisbon established in 2009 the steps to improve the social protection in Europe, considering the next 50 years, with scarce working force and a lot of old citizens.

The Treaty of Lisbon (initially known as the Reform Treaty) is an international agreement, that amends the two treaties which comprise the constitutional basis of the European Union (EU). The Lisbon Treaty amended the Treaty on the European Union (more commonly known as the Maastricht Treaty) and the Treaty establishing the European Community (the Treaty of Rome), renamed to the Treaty on the Functioning of the European Union (TFEU).

The three-pillar system consisting of a national defined contribution scheme (NDC contributory pension scheme), a capitalized pension scheme supported by state and private pension schemes, was the solution at hand [4].

Funds

Many countries have created funds for their citizens and residents to provide income when they retire (or in some cases become disabled). Typically this requires payments throughout the citizen's working life in order to qualify for benefits later on. A basic state pension is a "contribution based" benefit, and depends on an individual's contribution history [5].

In an unfunded defined benefit pension scheme, no assets are set aside and the benefits are paid for by the employer or other pension sponsor. The pension arrangements provided by the state in most countries in the world are unfunded, with the benefits paid directly from the current workers' contributions and taxes. This method of financing is known as Pay-as-yougo (PAYGO or PAYG). The social security system in the USA and most European countries are unfunded, having benefits paid directly out of the current taxes and social security contributions, while in Canada the wage-based retirement plan (CPP) is funded, with the assets managed by the CPP Investment Board. In some countries, such as Germany, Austria and Sweden, the companies run the retirement plans, often unfunded.

In a funded plan, the contributions from the employer, and sometimes also from the plan members, are invested in a fund towards meeting the benefits. The future returns on the investments, and the future benefits to be paid, are not known in advance, so there is no guarantee that a given level of contributions will be enough to meet the benefits. Typically, the contributions to be paid are regularly reviewed in a valuation of the plan's assets and liabilities, carried out by an actuary, to ensure that the pension fund will meet future payment obligations. This means that in a defined benefit pension, the investment risk and the investment rewards are typically assumed by the sponsor/employer and not by the individual [2].

The legislation for the social protection in the world is parted into:

- type A legislation, in which you are protected independently of how long you have worked or how much you have earned;
- type B legislation, in which you are protected accordingly to how much you have contributed (the Bismarck scheme, practically a pyramidal system).

It is much easier in the private insurance field - you are protected accordingly to how much you have contributed.

The type A legislation we can find in the UK, Denmark and the Netherlands - the flat-rate state pension, plus additional pension [5].

The type B legislation we can find in Romania, Austria, Germany, Latvia, Lithuania, Slovakia, Russia [2,4,5].

Many states, not only in Europe, have considered very difficult to sustain such schemes alone, because of the aging tendency of the population.

In Australia

The Age pension was the first payment issued from the Commonwealth Government and dates back to 1909. It is available to men aged 65 years