

Project № B2.9a.10 "Strengthening primary Medical care in Isolated and deprived cross-border arEas (Smile)" is co-funded by the European Regional Development Fund (ERDF) and by national funds of the countries participating in INTERREG V-A "Greece-Bulgaria 2014-2020"Cooperation Programme

Deliverable 4.3.1 Constraints' analysis to access primary healthcare service



1. Definitions

According to the Constitution of the World Health Organization (WHO), signed on July 22, 1946 in New York (USA), "health is a state of complete physical, mental, and social well-being and not necessarily the absence of disease or infirmity." The right to health is recognized in numerous international and regional documents – the Universal Declaration of Human Rights, the International Agreement on Socio-Economic Rights, the European Social Charter, etc. The Council of Europe defines the right to health as follows:

"The right to health should not be understood as the right to be healthy; it is impossible to provide protection against every possible cause of human ill health. It is the right of everyone, without discrimination, to enjoy the various services, facilities and goods, as well as adequate living conditions, which are necessary to remain healthy as much as possible. The right to health includes not only health services, but also conditions that determine our health, including: access to safe drinking water, adequate sanitation and shelter, adequate food, healthy working conditions and environment, and also access to health education and information.'

The purpose of public services in the field of health care is to ensure the "**well-being**" of the individual. "Well-being" is an umbrella term that covers the whole range of areas of human life, including the physical, mental and social aspects that make up what we can call the "good life". The domains of health are a subset of domains that make up the entire universe of human life ¹.

Functioning is an umbrella term for body functions, body structures, activities, and participation. It refers to the positive aspects of the interaction between the individual (who has a disease condition) and the contextual factors of the same individual (environmental factors and personal factors).

Impairment is an umbrella term for impaired function, limited activity, and limited participation. It refers to the negative aspects of the interaction between the individual (who has a disease condition) and the contextual factors of the same individual (environmental factors and personal factors).

Body functions are the physiological functions of body systems, including mental functions . "Organism " refers to the human organism as a whole, thus including the brain . Therefore, mental (or psychic) functions also belong to the category " body functions " . The statistical norm for human beings is accepted as the standard in these functions .

Body structures are the structural or anatomical parts of the body, for example organs , limbs and their components , classified according to the systems of the body . The statistical norm for human beings is accepted as the standard in these functions.

An impairment is a loss or abnormality of a given structure of the organism or a physiological function (including mental functions). Here, " anomaly" is used only in the sense

¹ See International Classification of Functioning, Disability and Health (ICIDH) of the World Health Organization (WHO)

of a significant deviation from the accepted statistical norms (that is, as a deviation from the mean value within measured standard norms) and should be used only in this sense .

An activity is the performance of a given task or action by an individual . It represents the personal perspective of functioning .

Limitations in activity are the difficulties that the individual encounters when performing the activities . Activity limitation may vary between mild and severe deviation in the quality or quantity of performance of a given activity in a manner or to an extent expected in people without the disease condition .

Participation is the participation of the person in a given life situation . The term denotes the social perspective of functioning .

Restrictions on participation are problems that the individual faces in different life situations. The presence of disabilities in participation is determined by comparison with what is expected of the participation of any individual without disabilities in the given culture or society.

Environmental factors refer to all aspects of the external and external world that form the context of an individual's life and as such influence that individual's functioning. Environmental factors include the physical world and non -physical characteristics, the physical world created by man, other people in different relationships and fulfilling different roles, voices and values, social systems and services . and, policies , regulations and laws .

In the context of health, the following definitions should be considered in relation to persons with disabilities:

- Body functions are the physiological functions of body systems (including mental functions)
- Body structures are the anatomical parts of the body, for example organs, limbs and their constituent parts
- Impairments are problems with a function or structure of the body, for example a significant deviation or loss
- Activity is the performance of a given task or action by the individual
- Participation is inclusion in a life situation
- Activity limitations are the difficulties that an individual may experience when performing a given activity(s)
- Participation restrictions are the problems that the individual may experience in relation to performing activities in life situations
- Environmental factors encompass the physical and social world and the attitudes towards which individuals/people exist and spend their lives

Regarding the classification that people with disabilities may encounter when accessing health services, the following components differ:

Section 1. Functioning and impairment

- a. Functions and structures of the organism
- b. Activities and participation

Section 2. Contextual factors

- c. Environmental factors
- d. Personality factors

Each component can be expressed in a *positive* and a *negative* order .



Figure 1. Positive and negative manifestations of individual components

Source: International Classification of Functioning, Disability and Health (ICIDH), WHO

2018.

It should be noted that:

- Impairments may be part of or an expression of a diseased state, but they do not necessarily indicate the presence of a disease, nor are they an indication that the individual should be regarded as ill.
- Impairments are much broader and more comprehensive in scale than disorders or diseases ; for example , the loss of a leg is a damage to the structure of the organism , but not a disorder or disease
- Damages can lead to other damages ; thus , for example , loss of muscle strength may cause impairment of motor functions, deficits in respiratory function may impair cardiac function, and impaired perception may affect mental functions.

In this sense, depending on the type of medical assistance that disabled people can receive in acute or chronic conditions, the following types are distinguished:

 The medical specialty "Emergency medicine" ²is based on the application of the knowledge and skills necessary for the prevention, prophylaxis, diagnosis and treatment of acute or suddenly occurring life-threatening, potentially lifethreatening or threatening with severe or irreversible damage to health diseases, disabilities or other emergency conditions or circumstances, including undifferentiated physical and behavioral disorders affecting patients of all age groups, in the practice of which the main and most critical factor is the time to

 $^{^2\}mbox{According to the "Emergency Medicine" medical standard (<math display="inline">\mbox{Ordinance No. 3 of } 10/6/2017$) .

undertake appropriate and qualitative diagnostic and therapeutic activities in order to achieve physiological stability and/or effective definitive treatment in the patient.

- Urgent medical assistance ³- medical activity for providing urgent medical assistance to sick and injured persons whose life is not directly threatened, but who need medical assistance in a short period of time in order to prevent further development and complication of the disease. Emergency medical assistance is provided without fail and at any time of the day to all those in need.
- Primary medical care ⁴- the specific activity that is performed by doctors and other professionals who work in medical facilities, forming an initial part of the health care system. They are the "first contact" of people with the health care system, when they are sick or healthy, or in need of medical assistance.

In its development, a person's disability passes through five stages: development of pathology, disability, functional limitation, disability and social limitation. They have the following characteristics:

- 1. **Development of pathology** : termination or difficulty of the body's natural processes and efforts to recover from a given disease
- 2. **Impairment** : changes in the individual are observed, such as anatomical, physiological and mental deviations
- 3. **Functional limitation** various activities of the individual are limited, such as walking, climbing, learning, thinking, seeing and hearing
- 4. **Disability** : the individual's activities are limited in relation to society (work, family) and the social roles he fulfills (learning, entertainment, overall independence, etc.)
- 5. **Social restriction** : restrictions or the presence of barriers for the individual are observed, which make it difficult to fulfill roles or limit access to various services, as well as his opportunities for full participation in society

The terms "impairment ", "permanent impairments " (" disability ") and " disability " ("handicap") are often used interchangeably. However, they have very different meanings. Differences in meaning are important for understanding the impact of neurological injury on development.

- Impaired functions: any loss or abnormality of a psychological, physiological or anatomical structure or function
- Permanent impairment : any limitation or lack (as a result of impairment) of the ability to perform an activity in a manner or within a range considered normal for a person
- Disability : a handicap for an individual that limits or prevents the performance of a normal role

Traditionally considered, " impaired functions " are related to a problem with a structure or human organ. " Permanent impairment " is a functional limitation related to the

³Pursuant to Ordinance No. 10 on Emergency Medical Assistance (promulgated SG No. 48 of June 14, 1994). ⁴According to Introduction to General Medicine and General Medical Practice, Ivanov, G., Dimitrova, D., NSOPLB, 2012.

performance of a certain activity, while " disability " is related to an inability to perform a role in life relative to a similar group.

Model, author	Basic components	Concept of " permanent impairment "
Nagy (1965, 1969, 1977, 1991)	 Pathology Impairment _ Functional limitation Permanent disabilities 	A pattern of behavior that develops in situations of long-term or prolonged impaired functions that are associated with functional limitations
Social (UPIAS , 1976; Oliver 1990, 1992, 1996)	Broken functionsPermanent disabilities	Limitation or loss of opportunities to participate in community life due to physical and social barriers
Verbrugge and Jette (1993)	 Pathology/disease Broken functions Functional limitation Permanent disabilities 	The permanent settlement is associated with difficulty in carrying out activities in any area of life due to a health or physical problem
Institute of Medicine (Pope and Tarlov, 1991; Brandt and Pope, 1997; Field and Jette 2009)	 Pathology Broken functions Functional limitation Permanent disabilities 	The expression of a physical or mental limitation in a social context - the difference between a person's abilities and the needs of the environment
ICIDH (WHO 1993)	 Broken functions Permanent disabilities Handicap _ 	In the context of the health experience, any limitation or lack (as a result of impairment) of the ability to perform an activity in a manner or within a range considered normal for a person
ICIDH-2 (WHO 1997)	 Impaired body functions and structure (impairment) Activity (restriction of the type of activities performed) Participation (restrictions on active participation) Environmental factors 	Permanent disability is a general term that includes disabilities , related to problems in body function or structure , such as significant deviation or loss, activity limitations , or difficulties an individual may have in performing activities and participation limitations, as problems a person may have in the manner or degree of participation in life situations
Quebec (DCP) (Fougeyrollas 1989, 1995; Fougeyrollas et al. 1998)	 Risk factors Personality factors: organic systems: integrity/Impaired functions abilities: capabilities/ permanent disabilities Environmental factors: obstacles habits of life Social participation/social restrictions 	It does not consider the concept of permanent disabilities per se , but rather a model of the "disability creation process " : explanatory model for the causes and consequences of diseases, traumas and other disturbances in the integrity and development of a person

Table 1. Permanent disability models, main components and concepts

Model, author	Basic components	Concept of " permanent impairment "
ICF (WHO, 2001)	Body function and structure	Permanent damage is a difficulty in
	(Impaired functions)	functioning at the bodily, personal or
	Activity (activity limitation)	social level in one or more life areas,
	Participation (restriction of	which is observed in relation to an
	participation in certain	individual and with a state of health
	activities)	when it interacts with environmental
	Other factors: environmental and personal	factors (Leonardi et al. 2006)

Source: Bickenbach, 2012.

2. State of health care in Bulgaria

Health care is one of the main sectors that guarantee people's quality of life. Although average life expectancy in Bulgaria increased from 71.6 years in 2000 to 74.8 years in 2017, it remains the lowest in the EU. The increase in life expectancy has been greater among women than among men, thus widening the existing gender gap to seven years. However, women in Bulgaria have the lowest life expectancy in the EU (78.4 years), while men have the third lowest (71.4 years).

Inequalities in life expectancy by educational attainment are significant. Men with low education at age 30 live an average of 6.9 years less than those with higher education, although this difference is smaller than the EU average of 7.6 years. For women, the difference is less pronounced — 4.5 years, but slightly larger than the EU average of 4.1 years. This difference in life expectancy can be explained in part by different exposure to risk factors such as tobacco use and unhealthy diet.

Child mortality is declining, but regional disparities persist. During the period 2000-2018, Bulgaria achieved significant improvements in terms of child mortality, which decreased significantly from 13.3 to 5.8 deaths per 1000 live births - a result that is also due to the National Program for the Improvement of Maternal and Child Health . However, significant regional differences continue to exist, with low coefficients of 1.5 and 2.6 respectively reported in the Smolyan region and the Sofia region (the capital), while much higher ones were reported in Pleven (11.3) and Razgrad (data : NSI).

Cardiovascular diseases are the leading cause of death in Bulgaria. Circulatory diseases account for the highest number of deaths in Bulgaria with over 1,100 per 100,000 people in 2016 (about three times the EU average of 360 per 100,000). Strokes account for 300 of them (compared to an EU average of 80). In fact, stroke accounted for about a fifth of all deaths.

In contrast, mortality from coronary heart disease, the second leading cause of death, has more than halved since 2000. The decline has been more pronounced in women than in men, and is partly due to reductions in some behavioral risk factors, as well as improved early

diagnosis and treatment (such as free annual medical examinations for cardiovascular disease) and increased use of antihypertensive drugs. hypertension.



Figure 2. Profile of the most common causes of death in Bulgaria

Source: Eurostat

Lung cancer is the most common cause of cancer death, with the death rate increasing by nearly 12% since 2000, partly reflecting the effects of smoking. Death rates from other types of cancer have also increased in recent years, particularly colon and breast cancer.

The majority of people report being in good health, but there are marked differences depending on the amount of income. In 2017, two-thirds of the population reported being in good health, which is close to the EU average of 69.7%. However, there are greater differences between different income groups in Bulgaria than in the EU. More than four in five individuals in the highest income quintile consider themselves to be in good health, compared to only about half of those in the lowest income quintile.

About two-fifths of life after the age of 65 is accompanied by some health problem or disability. In 2017, Bulgarians aged 65 are expected to live another 16.1 years - an increase of two years since 2000. However, as is common for other EU countries, some years of life after the age of 65 are accompanied by some health problems or disabilities. In Bulgaria, this is an average of about seven years, which is significantly less than the EU average. Although the gender gap in life expectancy at age 65 remains significant, with Bulgarian men living almost 4 years less than women (14.1 years vs. 17.8), the difference in years of life in good health is less than 1 year because women live longer with chronic diseases or disabilities.

Just over half of people aged 65 and over report having at least one chronic disease , a proportion slightly below the EU average. However, nearly a quarter of the population aged 65 and over report severe disabilities that limit basic activities of daily living (BAD), such as dressing and showering. This level is much higher than the EU average (18%).

Figure 3. Expected life expectancy at age 65 and share of people with chronic diseases (in Bulgaria and the EU)



Notes:

- Chronic diseases include heart attack, stroke, diabetes, Parkinson's disease, Alzheimer's disease, and rheumatoid arthritis or osteoarthritis
- Basic daily activities include dressing, moving around the room, bathing or showering, eating, getting into or out of bed, and using the toilet
- The indicator "number of years living in good health" measures the number of years people of different ages can expect to live without disability

More than half of all deaths are due to behavioral risk factors. The share of deaths due to behavioral risk factors is estimated at 51% of all deaths in Bulgaria, compared to 39% in the whole EU. Dietary risks, including low consumption of fruit and vegetables and high consumption of sugar and salt, were responsible for 33% of all deaths in 2017, the highest proportion in the EU and almost double the average value for the EU (18%). Tobacco smoking (including active and passive smoking) contributed to approximately 21% of all deaths, while around 5% was due to alcohol use and 4% to low physical activity.

Socio-economic inequalities contribute to health risks. Many behavioral risk factors in Bulgaria are more prevalent among people with lower levels of education and/or income, and the higher prevalence of risk factors among socially disadvantaged groups contributes significantly to inequalities in health status and life expectancy of life. For example, in 2017, almost 14% of people with less education were obese, compared to 11% among those with higher education. The exception is smoking, for which the levels among adults are almost the same regardless of educational level (23-24%).

Disparities in social health insurance coverage persist. The lack of coverage with social health insurance creates a serious barrier to access for a significant part of the population (10-14%). The uninsured must pay directly for medical services unless they visit an emergency center in a life-threatening situation. This affects the long-term unemployed, the Roma population and those living in disadvantaged regions differently.

Financial accessibility continues to deteriorate, especially for medicinal products. At 46.6%, Bulgaria reported the highest share of direct payments from patients in the EU in 2017, almost three times higher than the EU average. Medicines and medical devices form the largest share of direct payments by patients, followed by outpatient and inpatient care. Overall, direct payments by patients for medical care, excluding long-term care, accounted for 6.3% of final household consumption in Bulgaria, the largest share among EU countries in 2017.

Low-income households, such as those of people with disabilities, are more affected by health-related costs . Safeguards are not sufficient to reduce the burden of co-payments. High levels of direct patient payments are due to co-payments for the majority of covered services; direct payments for excluded services, such as most dental care for adults, as well as informal payments. Monthly quotas that limit referrals from general practitioners (GPs) also encourage patients to seek specialist care without a referral, where they pay all the costs of treatment.



Figure 4. Share of households affected by health-related costs

Although Bulgaria has a relatively large number of medical specialists (with the exception of nurses), their distribution is **uneven in favor of richer areas**. The situation with doctors is an example in this regard. The small number of GPs is unevenly distributed across the country, favoring urban and wealthier areas, resulting in significant shortages in other areas.



Figure 5. Regional distribution of doctors in Bulgaria

Source: National Institute of Statistics, 2019.

Disadvantaged areas (including the municipality of Ardino) - often remote rural areas or small towns, are perceived as unattractive to work in and imply a high workload, as patient lists are longer (e.g. more than 2,700 patients per GP in Kardzhali district). An aging workforce and the retirement of GPs are also ongoing challenges. The continued trend of emigration and urbanization is likely to further reduce the number of medical professionals in areas of need.

3 . State of the health care system in Kardzhali region

3.1 . Medical facilities for outpatient and inpatient care on the territory of Kardzhali region

Medical facilities for outpatient care in Kardzhali region

As of the end of 2018, there are 61 general practitioners registered in Kardzhali region, of which 49 are individual practices and 3 are group practices (with 12 general practitioners; GPs). There are 40 unoccupied medical practices for primary outpatient medical care in the district. A significant number of doctors, especially in small settlements, are of retirement or post-retirement age, and the number of young doctors is extremely small. This, in turn, leads to an imbalance between qualified personnel and a lack of continuity. There is a consolidation

of medical practices in the area, which leads to a decrease in the quality of health care for the population. The large distances between small settlements and urban centers make it difficult for the population in remote and hard-to-reach settlements and hamlets to access medical care.

The current state of the system in the district is mainly characterized by the fact that part of the residents in the villages do not have access to primary medical care. The provision of emergency care is generally insufficiently effective due to difficult access. An imbalance is observed - insurance is higher in the city compared to the villages, which is mainly due to the specific infrastructure of the district. For this reason, emphasis should be placed on the implementation of preventive medicine by personal physicians and the improvement of the means of transport of general practitioners and emergency medical care.

Type of medical facility	Number			
Outpatient clinics for individual practice for primary care (AIPPMP)				
Primary Care Group Practice Outpatient Clinics (GPPC)	3			
Outpatient clinics for individual practice for primary dental care (AIPDP)	192			
Primary Dental Care Group Practice Outpatient Clinics (PDCs)	7			
Outpatient clinics for individual practice for specialized medical care (AIPSMP)	71			
Outpatient clinics for group practice for specialized medical care (AGPSMP)				
Medical Centers (MCs)	4			
Diagnostic-consultative center (DCC)	1			
Medical Technical Laboratory (MTL)	10			
Medical Diagnostic Laboratory (MDL)	6			
Hospices	3			

Source: Regional Health Inspection - Kardzhali

Medical facilities for primary medical and dental outpatient care in Kardzhali region as of 04/16/2018, according to the data of the Kardzhali Medical Center, there are a total of 246 units, 54 of which are Outpatient Clinics for Individual Practice for Primary Medical Care (AIPPMP) and 192 Outpatient Clinics for Individual Practice for Primary Dental Care (AIPDP). The largest number of these types of medical facilities is in the municipality of Kardzhali, 25 and 108 respectively, and the smallest in the municipality of Jebel – 2 and 8.

Table 3. Medical facilities for primary medical and dental outpatient care by municipalities in the Kardzhali district to 16/04/2018

Municipality	AIPPMP*	AGPPMP**	AIPDP * **	AGPPDP****	
Arduino	6 -		14	-	
Krumovgrad	d 4 1 (2 GPs) 12		4 1 (2 GPs) 12		-
Momchilgrad	chilgrad 5		15	-	
Kirkovo	8	-	23	2 (3 dentists)	
Jebel	2	-	8		
Black eye 4		-	12		
Kurdzhali	25	2 (10 GPs)	108	5 (10 dentists)	

Source: Regional Health Inspection - Kardzhali Notes: *AIPPMP - Outpatient clinics for individual practice for primary medical care **AGPPMP – Outpatient clinics for group practice for primary care ** * AIPDP – Outpatient clinics for individual practice for primary dental care ****AGPPDP – Ambulatories for group practice for primary dental care

In the Kardzhali region, there are 192 individual practice clinics for primary dental care (AIPDP), followed by individual practice clinics for specialized medical care (AISMP) - 71 and individual practice clinics for primary medical care (AIPPMP) - 54. The most the number of diagnostic-consultative centers (DCC) is small - only one, and hospices (3) in the district. Group practice outpatient clinics are not available for specialized medical care.

Specialized outpatient care is a main integrating element in the health care system, which provides the population with affordable and quality medical care and allows to reduce the needs of significantly more expensive hospital care through active prevention, early diagnosis and effective treatment in outpatient settings. In the assessment of the needs of specialist doctors in outpatient medical care, the need to expand the package of activities by specialty and to transfer some hospital diagnostic and treatment activities to outpatient care was taken into account. Among the specialists from ISIMP, an uneven distribution is also observed, with their concentration being mainly in the municipal centers. This makes it difficult for the population to access this type of service, increases the number of cases with late diagnosis and complications, which leads to an increase in the number of hospitalizations.

Medical facilities for hospital care in Kardzhali region

In the Kardzhali region, there is a well-established system of hospitals, which is able to satisfy the needs of the population for medical assistance. The following Multi-Profile Hospitals for Active Treatment (MBAL) operate on the territory of Kardzhali region : MBAL "Dr. Atanas Dafovski" JSC - town of Kardjali, MBAL "Kardzhali" OOD, MBAL "Ardino" EOOD - town of Ardino, MBAL "D- Sergey Rostovtsev EOOD - Momchilgrad, Medical Center "Zhivot+" EOOD - Krumovgrad. Their total bed base amounts to 556 beds.

Table 4. Number of medical facilities for inpatient care in Kardzhali region and bed capacity, 2017.

Type of medical facility	Number	Beds
General hospital for active treatment	5	556
State Psychiatric Hospital	1	270
Home for medico-social care for children	1	90

Source: NSI

The bed base in the State Psychiatric Hospital (SPH) and Home for Medical and Social Care for Children (DMSGD) operating on the territory of the Kardzhali Region is a total of 360 beds. DPBs have a high usability - 84.8%, and the usability of DMSGD is 59.1% - close to that of MBAL. From 01.01.2011, the activity of the Regional Dispensary for Pneumo-Phthisiatric Diseases with Hospital (ODPFZS) "Dr. V. Vlasakev" EOOD was discontinued, and accordingly to

the Medical Center "Dr. Atanas Dafovski" JSC - Kardjali was opened Department of "Pneumology and Phthisiatry".

Since 2001, the first Cabinet in the country for free blood pressure measurement and the fight against hypertension has been operating in the municipality of Kardzhali, financed by the municipality of Kardzhali. A Health Center was also established in the town of Kardzhali, which, after its opening in 1979, became a training base for students, where they had the opportunity to expand their health culture.

Center for emergency medical assistance - Kardzhali

CSMP-Kardzhali operates on the territory of Kardzhali district, which has 8 branches (FSMP) in the district. In the municipality of Kirkovo, in addition to the two FSMP branches - Chorbadzhiysko village and FSMP - Kirkovo, there are also 2 outsourced teams of the FSMP - Kirkovo village, respectively an outsourced team in the village of Benkovski and an outsourced team in the village of Fotinovo. Staff insurance is sufficient, but the qualification of senior and middle medical staff is insufficient. There is a high turnover among doctors. The main burden, especially in affiliates, is borne by healthcare professionals. In order to improve the quality of the emergency medical care provided, it is necessary to provide resources, increase the qualification of the staff, and be ready to respond quickly to accidents, disasters and catastrophes in accordance with European standards.

3.2. Registered diseases in Kardzhali region

According to the "Healthcare 2017" Report of the National Statistical Institute (published on 02/08/2018), in 2016 the incidence of malignant neoplasms was the highest in the Kardzhali region (4,389 cases), and new ones were discovered only in 2016 627 cases. A significant number are also patients under the supervision of psychiatric institutions and structures.

In terms of reasons for hospitalization, excluding pregnancy, childbirth and the postpartum period, diseases of the circulatory system have the largest share, followed by diseases of the respiratory system and the digestive system.

Table 5. Hospitalized cases in Kardzhali region as of 2017 d. by groups of diseases (ICD-10 5)

	Class of diseases according to ICD-10, 2017	Number
I	Some infectious and parasitic diseases	1 479
П	New formations	191
	Diseases of the blood, blood-forming organs and individual disorders	1
	involving the immune mechanism	
IV	Diseases of the endocrine system, disorders of nutrition and metabolism	1,265
V	Mental and behavioral disorders	1 635
VI	Diseases of the nervous system	269
VII	Diseases of the eye and its appendages	837
VIII	Diseases of the ear and mastoid process	489

⁵ International Statistical Classification of Diseases and Related Health Problems developed by the World Health Organization.

	Class of diseases according to ICD-10, 2017	Number
IX	Diseases of the circulatory system	4,837
Н	Diseases of the respiratory system	3,663
XI	Diseases of the digestive system	2,586
X II	Diseases of the skin and subcutaneous tissue	983
XIII	Diseases of the musculoskeletal system and connective tissue	1,560
XIV	Diseases of the genitourinary system	1 373
XV	Pregnancy, birth and postpartum period	3,090
XVI	Some conditions occurring during the perinatal period	230
XVII	Congenital anomalies, deformities and chromosomal aberrations	13
XVIII	Symptoms, signs and abnormalities	321
XIX	Trams, poisoning and some other consequences of the impact of external	1 259
	causes	
XX	External causes of morbidity and mortality	-
XI	Factors affecting the health status of the population and contact with	817
	health services	
TOTAL		26,898

Source: National Health Card 2018⁶

3.3. Mortality in Kardzhali region

The mortality rate in the Kardzhali district in 2017 was 13.0‰, which is lower than the average for the country (15.5‰) and that of the South Central region (15.3‰). There is a significant difference between the mortality rate of the rural and urban population of over 3‰, which is explained by the more intense process of population aging in the villages.

The increase in mortality and emigration processes form the negative natural increase - minus 3.3‰ for the district, with significant differences by municipality: from minus 1.1‰ in the municipality of Kardzhali to minus 8.2‰ in the municipality of Kirkovo. Difference in the values of mortality and birth rate indicators (higher in cities), resulting in a drastic reduction of natural growth in villages, compared to that in cities in the district: in cities – minus 0.2‰, and in villages – minus 5.5‰.

Among the reasons for the increase in mortality in the district are:

- The deepening aging of the population
- Increase in mortality in active age from socially significant diseases
- Risk factors related to the lifestyle of the population: irrational nutrition, smoking, hypodynamia and stress
- Socio-economic and ecological factors of the environment

Table 6. Deceased by age in the territory of Kardzhali region (number), 2013-2017.

Year	Under	1-9	10-19	20-29	30-39	40-49	50-59	60-69	70 and	Total
	1 year	years	over							
2013	11	3	3	7	25	52	152	288	1 172	1 713
2014	9	5	3	13	17	47	155	285	1 276	1 810
2015	10	3	3	6	29	63	179	303	1 313	1 909

⁶Confirmed by <u>Decision No. 361 of the Court of Justice of May 29, 2018.</u>

Year	Under	1-9	10-19	20-29	30-39	40-49	50-59	60-69	70 and	Total
	1 year	years	over							
2016	8	2	3	6	29	53	170	338	1 293	1 902
2017	8	5	5	7	23	52	150	327	1 382	1 959
-	_									

Source: NSI

In 2017, 1,959 people died in Kardzhali region, which is 246 people or 13.47% more than in 2013.

The highest mortality rate is among those aged 70 and over, and the lowest among those aged 10-19, followed by those aged 1-9. In contrast to the negative death rate among persons up to 29 years of age, there was an increase in the death rate among those aged 30 and over in the period 2013-2017.

Table 7. Mortality by causes of death in the territory of Kardzhali region (per 100,000 people of the population), 2017.

Causes of death	Number					
	Total	Men	Women			
1. Diseases of the circulatory system	799.5	776.0	822.6			
2. New formations	192.7	240.0	146.1			
3. Symptoms, signs and abnormalities found in clinical and	137.8	138.7	136.9			
laboratory tests, not classified elsewhere (including ill-defined						
and unspecified causes of death)						
4. Diseases of the respiratory system	52.3	61.3	43.4			
5. Diseases of the digestive system	39.1	40.0	38.2			
6. External causes of morbidity and mortality (e.g. accidents,	32.5	44.0	21.1			
intentional self-harm, assaults, etc.)						
7. Diseases of the genitourinary system	17.9	18.7	17.1			
8. Others	25.8	29.4	22.3			
TOTAL	1,297.6	1 348.1	1,247.7			

Source: NSI

In 2017, the main cause of mortality in the Kardzhali region remained the diseases of the organs of blood circulation and neoplasms, forming a share of 76.5% of all causes. Mortality among men is significantly higher than that among women for all diseases except diseases of the circulatory system .

3.4. Comparability with neighboring areas

Comparability with neighboring areas is a key point in understanding the above data and how it compares to the regional situation. For this purpose, the state of the existing health system in the two districts bordering Kardzhali - Haskovo district and Smolyan district - has been studied.

Haskovo region continues to be among the regions with relatively limited capacity of health facilities. Smolyan district continues to be among the districts with the highest share of health-insured persons - 95% compared to 88% for the country in 2016 d. In Kardzhali region, a trend from previous years continues to be observed for one of the regions in the country with the greatest shortage of doctors.

The population structure in all three regions continues to follow the country's aging trend. However, Kardzhali district remains among the districts with a relatively favorable age structure – both coefficients for age dependence in the district are lower than the average for the country. Smolyan district continues to be the district from which the largest number of people emigrate.

3.5. Conclusions

The main shortcomings and problems in the field of health care in the territory of the Kardzhali region, which should be the subject of intervention, are:

- The large distances between small settlements and urban centers make it difficult for the population in remote and hard-to-reach settlements and hamlets to access medical care
- Part of the residents in the villages actually do not have access to primary medical care, which is confirmed by the large number of non-urgent examinations
- A serious imbalance is observed insurance is higher in the city compared to the villages, which is mainly due to the specific infrastructure of the district
- The region is unattractive for medical specialists due to the specific infrastructure, geographical location fragmentation and remoteness of settlements, migration processes
- The lack of specialists in oncology, vascular surgery, toxicology, rheumatology and allergology limits the population's access to these clinical specialties
- Due to the unevenness of pre-hospital care on the territory of the district, the number of hospitalizations in many hospitals is increasing
- In remote settlements, consultation with a specialist is almost impossible
- The patient does not have access to laboratories, imaging departments and prefers to refer to the hospital as a complex in which to receive the necessary service
- In the primary outpatient care, no organization has been created to fulfill the obligations imposed by the contract of the general practitioner for faultless 24-hour service. Therefore, the number of patients referred to specialists and to the hospital system increases with this practice, secondary examinations and hospitalizations increase

4 . National policy aimed at persons with disabilities

4.1 . Legislative framework in Bulgaria

Law on Persons with Disabilities

The Law on Persons with Disabilities ⁷regulates public relations related to the exercise of the rights of persons with disabilities in the Republic of Bulgaria. It guarantees the rights of people with disabilities in a way that ensures respect for their human dignity and their equal

 $^{^{7}}$ Pron. DV. no. 105 of December 18 , 2018 , in force from 01.01.2019 .

treatment in private, public and political life, applying an individual approach and an individual assessment of needs.

The law aims to:

- It promotes, protects and guarantees the full and equal exercise of the rights and freedoms of people with disabilities
- Created conditions for social inclusion of people with disabilities
- Promotes respect for the inherent human dignity of people with disabilities
- Provides support for people with disabilities and their families

Health care is the first area of support for people with disabilities specified in the law, and the means provided for this include medical, professional, social, labor and psychological rehabilitation.

Anti-Discrimination Act

According to the Law on Protection from Discrimination, ⁸harassment based on any of the signs under Art. 4, para. 1, namely gender, race, nationality, ethnicity, human genome, citizenship, origin, religion or belief, education, beliefs, political affiliation, personal or social status, disability, age, sexual orientation, marital status, property status or of any other signs established by law or in an international treaty to which the Republic of Bulgaria is a party, sexual harassment, incitement to discrimination, persecution and racial segregation, as well as the construction and maintenance of an architectural environment that makes it difficult for persons with disabilities to access public places , are considered discrimination.

A fine of BGN 250 to BGN 2,000 is provided for discrimination within the meaning of this law, if the act is not subject to a heavier penalty.

4.2 . Strategic program documents

National strategy for people with disabilities 2016-2020

National strategy for people with disabilities 2016-2020.⁹ is a basic document that formulates the priority goals and measures and is aimed at improving the quality of life of people with disabilities, preventing discrimination on the basis of "impairment", ensuring their full and active participation in all areas of public life and promoting respect for their rights in all policies. The national goals and priorities of the National Strategy are formulated in accordance with the European Strategy for People with Disabilities for the period 2010-2020 "Re-commitment to Europe without barriers". The goals and priorities also correspond to the National Health Strategy 2020, in which special attention is paid to this group of citizens Policy 1.6 "Best possible health for people with disabilities". The strategy was also developed in connection with the implementation of the national commitments to implement the ratified UN Convention on the Rights of Persons with Disabilities, in particular in implementation of

⁸Last amended, SG no. no. 7 of 19.01.2018

⁹Adopted by RMS No. 549 of 07.07.2016.

strategic objective 8, item 8.2 of the Action Plan of the Republic of Bulgaria for the implementation of the Convention on the rights of people with disabilities (2015-2020).

Ensuring effective access to quality health services has been identified as a key policy priority in the period up to 2020. Access to health services for people with disabilities is expressed in the National Health Strategy 2020, in which special attention is given to this group of the population in Policy 1.6 "Best possible health for people with disabilities". The policy is based on the understanding that in order to ensure a good quality of life and equal access to all levels of the health system for people with disabilities, a complex and integrated approach should be applied to their health, social, educational and other needs. The main principle of the health policy regarding disabled people is related to the fact that medical activities related to the primary and secondary prevention of disabilities are of utmost importance to ensure equal access to quality medical care for disabled people. In order to minimize the risks of diseases leading to disabilities, directing primary prevention to health promotion, prevention and early diagnosis of diseases. The development of prenatal diagnostics and subsequent medical care for the health of children and people in all age groups is of great importance. Secondary prevention of disabilities is related to the health system's ability to provide timely and high-quality medical assistance with the aim of maximum recovery of health. Therefore, the efforts of the state should be directed to activities related to increasing the quality of the preventive, diagnostic, curative and rehabilitation activities of the health care system. The main reasons for difficult access to medical care for people with disabilities include poverty and social isolation, stigmatization, remoteness or inaccessibility of medical facilities, communication problems, etc.

The planned measures related to ensuring effective access to quality health services for people with disabilities include:

- Increasing understanding among doctors and medical professionals about the human rights, dignity, autonomy and needs of people with disabilities, through training and dissemination of ethical standards of health care
- Providing people with disabilities with the health services they need according to the type and extent of the particular disability, early detection and appropriate intervention leading to the reduction and prevention of further disabilities
- Building logistics networks for diagnosis, treatment and rehabilitation of children and people with disabilities within the existing health system
- Improving coordination between different health professionals, as well as social and other services provided to people with disabilities
- Ensuring timely rehabilitation as a complex activity, including medical, professional and social rehabilitation
- Development of the necessary capacity of the structures implementing complex rehabilitation programs, including medical and functional diagnostics, physical and rehabilitation medicine, speech therapy, occupational therapy, psychotherapy, etc.
- Improving the mechanisms for providing medical devices and technical aids, including individual prostheses and orthoses and other auxiliary devices and technologies intended for the habilitation and rehabilitation of disabled people
- Coordination of medical, social and professional rehabilitation to achieve full integration, reintegration and inclusion of people with disabilities in society, including ensuring employment

- Implementation of integrated approaches and services in the community to meet the needs of people with disabilities from supportive treatment, general and specific health care in an outpatient or home setting, social rehabilitation, educational and vocational training and guidance, individual programs for social inclusion
- Introduction of assessment of impairment and functioning using the International Classification of Human Functioning, Disability and Health (ICF) of the World Health Organization, through the use of objective and internationally standardized criteria for assessment of impairment by competent professionals. Damage is a complex phenomenon that reflects the problems of the human body and environmental factors

4.3. Scope of people with disabilities

According to NSI data, as of February 1, 2011, when the 17th population census was carried out in the country, which included questions to establish the number of people with disabilities, 474,267 persons declared such (6.32% of the population of the country as of 31.12.2010, when it was 7,504,868 people), of which 9,039 were children under 16 years of age.

Year	Degree of impairment						
	up to 50%	50-70%	71-90%	over 90%	TOTAL	Share of the population - as of 31.12.2010.	
16 and over - general	38,846	110,528	184,556	131,298	465 228	6.20%	
Children (under 16) -	1 964	4,040		3,035	9,039	0.12%	
total							

Table 8. Persons with disabilities by degree of disability as of February 1, 2011

Source: NSI, based on census as of February 1, 2011.

It is possible that the above number is significantly higher, because out of about 6.3 million respondents, about 4.5 million answered this question (about 70%). According to data from the National Center for Public Health and Analyzes at the Ministry of Health, in the period 2011-2016, an additional 388,064 people were disabled.

Table 9. Certified persons over 16 years of age with recognized permanently reduced working capacity/type and degree of disability¹⁰

Year	Permanently reduced working capacity/type and degree of disability					
	up to 50%	50-70%	71-90%	over 90%	TOTAL	Share of the population at the end of the year
2011	7,031	20,524	21,012	15,803	64,370	0.88%

¹⁰The data are from the two information systems for children up to 16 years of age and persons over 16 years of age, certified by TELK and NELK, who for the first time in the respective year were determined to have permanently reduced working capacity or the type and degree of disability.

2012	7,469	19,749	20 114	14,715	62,047	0.85%
2013	8,078	22 190	22,670	15,939	68,877	0.95%
2014	9 138	23,062	22,783	15,380	70,363	0.98%
2015	9,574	22,031	19,838	14,308	65,751	0.92%
2016	7,659	19 111	17,077	12,809	56,656	0.80%
TOTAL	48,949	126,667	123,494	88,954	388,064	-

Source: National Center for Public Health and Analysis at the Ministry of Health, 2017. Assuming that the death rate in Bulgaria is an average of 108,000 people per year and applying an equal coefficient for the death rate of people with and without disabilities, as of 31.12.2016, when the population of the Republic of Bulgaria was 7,101,859 people, it can be assumed, that the number of people with disabilities was about 750,000 people or about 10.6% of the country's population.

The above values are confirmed by information provided by the Agency for People with Disabilities, according to whose data, there are **648,685 registered adults with disabilities over 50%**. In addition to them, about 26,000 more children with disabilities over 50% are registered.

As of April 30, 2018	From 50% to 70.99%	From 71% to 90%	over 90%	Over 90% accompanied	TOTAL
Number	175,449	311 298	81,681	80,257	648,685
A share from all	27.0%	48.0%	12.6%	12.4%	100.00%

Source: Agency for People with Disabilities, 2018.

Applying the above data for the Kardzhali district, which at the end of 2018, according to NSI data, had a population of 152,873 people, the number of registered persons with a disability of more than 50% in the district is about 15,000 people.

The model describing disability as a socio-economic phenomenon emphasizes the potential exclusion of people with disabilities from social relations, the economy and the environment. One category of social and environmental barriers is barriers to access to health care and health services. Even when such services are accessible to people with disabilities, access to them is not guaranteed.

The World Health Organization distinguishes three types of access:

- Physical accessibility or "the availability of good health services within reasonable reach of those who need them, as well as opening hours, job placement systems and other aspects of the organization and delivery of services that enable people to obtain the services when they need them'
- Financial affordability, which is assumed to be "influenced by the wider health financing system and by household income"
- Acceptability, which refers to "people's willingness to seek services" (and which is low when "patients perceive services to be ineffective or when social or cultural factors, such as language or age, gender, ethnicity, or religion of health care providers services discourage them from seeking services"

In the context of disability studies, a distinction is made between the terms 'access' and 'accessibility', which are usually used interchangeably. While access refers to individuals,

accessibility refers to the relationship between the individual and their environment and the removal of associated barriers.

Barriers related to the environment

Attempting to group the access barriers commonly encountered by disabled people, three categories can be identified:

- Barriers to physical access
- Barriers related to the attitude towards them
- Barriers related to lack of information

The first category of barriers includes inaccessibility related to transport and infrastructure. The second category refers to individual and collective attitudes that contribute to reinforcing barriers to access. The third and final category is related to the ability to obtain complete and up-to-date information (Eichorn and Buchalis, 2011).

Accessibility requires that buildings, premises and services are planned and managed in a safe, healthy, comfortable and pleasant way so that all members of society can use them. Therefore, accessibility should be ensured globally by combining all policy areas such as construction, information and communication technology, education and transport (Naniopoulos and Tsalis, 2016).

Considering different access needs, the barriers created by the environment according to different types of disabilities are summarized below.

Wheelchair users	Persons with disabilities of the lower limbs	Persons with upper limb impairments	People with - walking disabilities	People with limited vision	People with limited hearing
Crossing the threshold between the street and the sidewalk	Overcoming - protrusions	Opening heavy doors	Orientation	Spotting obstacles on sidewalks	Crossing streets
Climbing stairs	Movement in situations that require speed	Turning the door handle	Spotting obstacles on the sidewalks	Orientation	Managing situations that require the use of speech or linguistic communication
Passing through tight spaces	Climbing stairs or ramps	Use of public water	Crossing streets	Crossing streets	Inability to hear bells and alarm
Passing through narrow doors and where there are high thresholds	Use of toilets	Tountains	Use of elevators	Use of elevators in emergency situations	Sounds

Table 11. Barriers of the environment according to different types of disabilities

Wheelchair users	Persons with disabilities of the lower limbs	Persons with upper limb impairments	People with - walking disabilities	People with limited vision	People with limited hearing
Access to poles - and other objects at a greater height	Passing - through narrow doors and where there are high thresholds		Recognizing - emergency situations	Identify - obstacles	
Use of toilets			Spotting exit signs or stairs		

Source: Vlavianou-Arvaniti, 2004.

Regarding access, three dimensions are distinguished : physical, sensory and communicative. In these three categories, access should not be treated as a problem, but as a process of inclusion. There are two main concepts regarding access to health care:

- The first emphasizes the characteristics of the population (family income, social coverage, attitude to medical care) or the distribution system (resources capital and labor, as well as organization of human resources and equipment).
- The second approach, conversely, focuses on the outcomes associated with a person's passage through the health care system; considers that service utilization rates or satisfaction levels allow for "external verification" of the relevance and/or individual characteristics of the system

There are two quantitative indicators for assessing access. The first is based on the weighted sum of the waiting time for an examination, the time required to transport the patient, the time spent in the waiting room and the time required for the treatment process in a given medical facility. The second metric is the weighted sum of the difference between the ideal and actual number of services, the ideal and actual number of staff, and the ideal and actual availability of equipment in a given community. In this sense, two main aspects are distinguished in which access can be facilitated or hindered:

- Socio-organizational (such as patient gender, amount of treatment value and specialization) and
- Geographical, referring to the time and physical distance that must be traveled to receive health care

Social and economic barriers

Based on the above concept, *availability* of health services does not necessarily mean *access* to these services. The "behavioral model of health service use" developed by Andersen (Aday and Andersen, 1974) emphasizes the use of services, defining five parameters:

- Health policy
- The characteristics of the health service delivery system
- Characteristics of the population at risk
- The use of health services
- User satisfaction

Against Andersen's model and its emphasis on the use of services, Penchanski contrasts the "match" between the patient's needs and the system's ability to meet them. For Penchansky, there are five parameters that determine this match:

- Availability of doctors and health services
- Accessibility, namely the spatial relationship between the health care provider and consumers
- -in, ease of use related to doctors' working hours, waiting time and time to schedule an appointment
- Affordability, meaning the economic ability of the population to use the care provided by the system
- Acceptability, namely patients ' attitudes towards healthcare providers and vice versa (Penchansky, 1981; Ricketts and Goldsmith, 2005)

Extending this model, Julio Frenk introduced the concept of *resistance* to clarify the difference between availability and accessibility. Resistance has been defined as "a set of barriers that arise as a result of available health resources and impede the seeking of and access to care" (Frenk, 1992; Ricketts and Goldsmith, 2005).

On the part of medical staff, it is important to bear in mind that while it is essential for people with disabilities to receive appropriate interventions (medical, psychological and social), they must take into account the different contexts and environments (situations) in which these persons live. Individual treatment does little to change the behaviors that create barriers (Sherlaw et al, 2013).

In contrast to Penchanski's model, which explicitly views patients as users of services, research by Sherlaw et al. promotes the 'social determinants of health' approach (Marmot 2000 and 2010). Drawing on the case of France, where children from lower socioeconomic backgrounds are seven times more likely to enter institutions than children from higher socioeconomic backgrounds (Sherlaw et al., 2013, 445), they argue, that the health of a certain group of the population can be modified provided that the social factors that determine it are changed.

Therefore, exclusion from health services is mainly related to socio-economic factors that arise both from the environment from which the patient originates, as well as from insufficient education and the lack of sufficient communication and access to the health system.

Globally, it has been unequivocally established that:

- Barriers to access to health services are economically and socially determined and affect the entire population, both disabled and non-disabled. Therefore, lowincome countries are "ahead" on all indicators related to the presence of barriers, and in particular those related to the financial inability of patients to visit or cover the cost of transportation to access a provider. health care
- People with disabilities rank at the bottom of every single indicator, although they follow general population trends

5. Ways to improve communication between medical staff and people with disabilities

Based on the theoretical statements discussed in the above chapter, the main limitations for access to primary medical care for persons with disabilities are presented here:

- Lack of knowledge and skills on the part of the medical staff (doctors, nurses and orderlies), lack of communication between parties, lack of identification of special needs, as well as a lack of attitude to the patient
- Attitudes positive or negative on the part of medical staff, depending on experience and gender
- Organizational management shortage of time, shortage of personnel
- Socio-economic barriers inadequate equipment, lack of specialized transport, inability to cover medication costs
- Environmental barriers inaccessibility of infrastructure

The above limitations can be due to various reasons:

- Time and staff shortages are socio-economic barriers related to health policy and the socio-economic priorities that dictate it
- Negative attitudes are usually related to a lack of communication and knowledge about working with people with disabilities
- The lack of professional knowledge about working with people with disabilities is due, among other factors, to a lack of experience
- Lack of adequate transportation is a socio-economic barrier as it results in health services being inaccessible to people with disabilities

Therefore, the present part of the analysis provides suggestions based on good practice on ways to improve the interaction between medical professionals and people with disabilities, focusing on three main categories of patients:

- Persons with visual impairments
- Persons with motor disabilities
- Persons with hearing impairments

5.1. Improving access to medical services for people with visual impairments

Everyone who has a visual impairment is unique in their own right – the experience of not seeing is different for each person. The impact of this impairment depends on the type of vision loss and how severe it is. Some individuals may rely on a guide dog or use a white cane to get around, while others may have enough sight to get around on their own.

Blind or visually impaired people may have some of the following difficulties:

- They may be more dependent on their hearing to communicate with other people.
- They may fail to connect the intonation of the voice with the facial expressions and gestures that make it easier to follow and understand the conversation

- They may be more dependent on their hearing for information; therefore, high levels of background noise may be a problem for them
- Their understanding of distance, dimensions, and scale is likely different from that of sighted people who are familiar with these concepts in practice. When given directions to a destination, they may misjudge how long it would take them to reach the designated location
- They may have missed out on getting the everyday practical information about the world that sighted people take for granted and so may need practical introductions to new situations and new environments
- In low light they may have difficulty seeing at all or have problems judging speed and distance
- In some cases, bright lighting can improve visibility

People with visual impairments may have some difficulty with the following:

- Receiving information
- Reading text from brochures
- Relying on charts and tables that are usually read by specialized software for people with disabilities
- The use of information and communication technologies without aids, e.g. magnifier, JAWS reader, large keyboards, etc.
- Use of facilities in buildings, incl. in hospitals
- Independent movement from one place to another





Figure 6. International symbols for the visually impaired

Examples of visual impairments:

• **Total blindness** - blindness is a state of lack of visual perception caused by physiological or neurological factors

- Loss of central vision for example, macular degeneration is a medical condition primarily in older people that results in loss of vision in the center of the visual field due to damage to the retina.
- **Peripheral vision loss** individuals with peripheral vision loss, so-called tunnel vision, retain clear central vision. In some cases, a small area of retinal visual activity is preserved in the periphery, allowing for the detection of motion and objects, thus aiding facial orientation. Usually, individuals with lateral vision loss do not automatically perceive the loss because the areas where there is no retinal cell activity are neither light nor dark
- **Blurred Vision** Blurred vision puts both near and far out of focus even with the best possible conventional eyeglass correction

Recommendations for healthcare workers when working with visually impaired persons:

- Patient safety must be considered
- Documented clinical care should be provided
- The exact procedure that the doctor will follow should be explained so that the patient can fully understand it and give his consent

Advance information is required. Before examining the visually impaired patient, the doctor should make sure that he knows the following:

- The patient's levels of visual function
- Visual acuity
- The visual fields
- Techniques for talking to people with visual impairments
- Concepts such as consent, liability, negligence

Access to the health care system

People with visual impairments in most cases have limited access to information and health care, resulting in suboptimal treatment. These difficulties are further compounded by the fact that health professionals are not aware of the additional demands arising from their disability. Visual impairment is usually not obvious to the casual observer. This is especially true in cases where the visually impaired do not use a white cane, do not have a guide dog, or do not use an electronic navigation aid.

Often people with visual impairments do not inform medical personnel about their impairment. This seems to be especially true among older people who feel embarrassed that they can no longer see well. As a result, they often sign documents that they do not know what they contain or whether they really agree with their content. This ignorance often creates anger and confusion. Furthermore, it can give the casual observer the image of a demanding person, when in reality it is directly related to the societal consequences of their disability.

Healthcare professionals need to be well informed to be able to recognize the subtle signs that indicate a patient may have visual impairment, even if it is not immediately obvious. These signs may include the following:

- 1. A person who has difficulty finding a chair or furniture
- 2. A person who drags their feet on the floor or walks very slowly without any obvious movement problems

- 3. A person who blinks intensely with changes in light intensity. Also, he/she may not make eye contact during a conversation or not respond if someone does not make their presence known by touch
- 4. A person wearing dark glasses while indoors
- 5. A person who is constantly accompanied

Given that people with partial or total vision loss may experience difficulties in communicating with healthcare professionals, it is important that both patient and healthcare professional achieve effective communication. If a person with visual impairments does not receive appropriate medical information about the health problems they are facing, they will not be able to properly follow treatment instructions. Difficulty accessing visual information may require the involvement of a third party other than the healthcare professional and the patient to read content. As a result, confidentiality of medical care is lost.

At the same time, the personal health of the visually impaired person depends on information that may not be conveyed correctly. Therefore, it is important to understand that when health professionals talk to people with visual impairments, they need to share information effectively with them, their family or their companion (if the person wishes to share medical problems in front of them - a delicate issue, related to professional confidentiality).

If the patient has partial vision that allows him to read things related to his medical treatment or instructions for follow-up visits, the doctor should write the text in large, capital letters on a contrasting background - on white paper without lines and using a black pen or felt-tip pen, to create sufficient color contrast. Letters must be at least 1.5 cm in size.

Instructions can also be sent by email if the healthcare professional knows that the visually impaired patient can amplify them, has electronic devices or personal computers that allow speech synthesis.

The person with partial or total vision loss should be allowed to record any information on any electronic medium they wish, or to use a Braille notebook if they have one.

In the event that the doctor has to prescribe drug treatment, he must make sure that the visually impaired patient can distinguish his pills, measure the doses of the drugs if they are liquid, or be able to measure the eye drops himself. For this purpose, the doctor should ensure that the patient has adequate devices, such as those shown below.



Pill organizer



Device for dispensing liquid medicines





Eye drop device

Insulin dosing device

The use of devices with voice announcements may be recommended for taking temperature or blood pressure.

Recommendations for improving communication between the doctor and visually impaired patients

A step	Justification
1. (a) Make your presence known by stating	Direct verbal communication will bring the
your full name and your role	desired sense of security to your patient,
(b) Talk face to face	while face-to-face communication with a
(c) Speak in a natural tone and intensity of	natural tone of voice will help him navigate
voice. Remember that you are addressing a	the space and, therefore, feel more relaxed.
person with vision loss, not hearing loss	
2. Don't expect eye contact or eye	Many people with vision loss cannot focus
reassurance	on a person's face at all or have not learned
	to follow the voice. This does not mean that
	the patient is not following what you are
	saying or not listening to what you are saying
3. Speak directly to the patient and do not	Although the patient can be accompanied if
speak through third parties (e.g. through the	he is a person over the age of 18, the
attendant)	companion does not have the right to make
	decisions on his behalf, is not a guardian, nor
	does he fulfill the duties of a guardian. The
	role of the attendant is limited to the safe
	orientation of the visually impaired patient
	in space
4. If there are other people in the room,	This serves to understand the number of
introduce them	people on the patient's side, as well as their
	names
5. Inform the patient when you are leaving	Otherwise, the visually impaired person may
the room or when the conversation is over	continue to speak without realizing, for a
	short time, the absence of someone. This
	can cause him or her embarrassment and
	confusion
6. Try to avoid places where it is very noisy	Noise creates obstacles to effective
	communication

A step	Justification
7. Ask the patient about his vision level and if he needs help	This will help with how you choose to move in the space, communication and ultimately the degree of trust you will develop with your patient
8. Don't avoid using words like "look", "see" or asking "did you see the news?"	He/she will not feel bad at all. Conversely, speaking in a complicated manner or trying to avoid words will make the patient feel uncomfortable
9. During the visit, if a physical examination is forthcoming, lead the patient to the examination area and then explain the physical contact that will occur with the patient's body	Explaining each stage of the examination and the equipment you use will lead to optimal cooperation, as your patients will feel comfortable, secure and will not make sudden movements that can be dangerous for the process (for example, when using an otoscope)
10. If other people are present during the examination (eg, medical students, medical staff, etc.), inform the patient and ask them if they feel comfortable in their presence. Ask the other persons to introduce themselves, introduce their role, and ask for the patient's consent to remain in the room	Your patient will feel uncomfortable if they hear other voices and the relationship of trust with the doctor may be broken
11. Be clear and specific when giving instructions. For example: "The door is on your left". Avoid using gestures to indicate direction	Clear verbal description relating to orientation guidelines makes the visually impaired person independent in an unfamiliar environment
12. Explain to the patient the location of the objects. For example: "The glass of water is right in front of you" or use the clock method, e.g. "Your water is 3 hours away from you"	The description of objects in front of the table frees the visually impaired person from the worry of unintentionally causing even a small accident
13. Be aware that changes in light affect vision	Bright light can cause more trouble. Ask your patient what is more comfortable for them

After the review:

- Make sure the patient is comfortable
- Ask the patient if they have any questions or concerns
- Make sure the patient understands the treatment instructions you have given
- Ensure hand hygiene after patient contact
- Make sure the patient leaves the examination area safely

Questions for self-assessment of your work:

- 1. How did the patient feel during the examination? Did his body language indicate any discomfort or embarrassment that wasn't voiced?
- 2. Were you able to follow the techniques for accompanying the patient?

- 3. Have you provided the right conditions for effective communication?
- 4. Did you encounter a problem during the review?
- 5. Did you answer the patient's questions?

Do not forget:

- Keep the patient calm
- Thank the patient
- If there is no chaperone to accompany the patient, ensure that a member of staff helps them out

5.2. Improving access to medical services for persons with motor disabilities

Motor impairments can be caused by a number of temporary or permanent conditions. The effects may change from day to day, may remain constant, or may progressively worsen over time. The condition can affect some parts of the body or the whole body.

Persons with mobility impairments are defined as persons who have a problem with:

- Mobility (in a wheelchair, using crutches, a cane or other aids)
- Manual activities due to the impairment of their hands
- They have disabilities in their limbs and have a constant need for assistance from another person

The following conditions are often associated with difficulty with limb mobility or dexterity:

- **Muscular dystrophy** encompasses a group of inherited movement problems involving the deterioration and loss of muscle fibers
- **Cerebral palsy** a disability that is associated with poor coordination and involuntary muscle movements
- **Paralysis** damage leading to loss of sensitivity of certain parts of the body and inability to move with them
- **Hemiplegia** paralysis of one part of the body as a result of a stroke or brain injury. It differs from paraplegia and quadriplegia, where the brain is not affected. With hemiplegia, there may be impairment of intellect, personality, speech, or sensation
- **Paraplegia** paralysis of the lower limbs and part or all of the muscles of the torso. There is usually loss of feeling in the paralyzed limbs, as well as other effects such as muscle spasms, pain and loss of bowel and bladder control
- **Quadriplegia** occurs when there is damage to the spinal cord in the cervical region. In addition to the effects of paraplegia, it also causes damage to the hands
- **Multiple sclerosis** a disorder of the nervous system that attacks the brain and spinal cord and causes damage to nerve tissue. It is usually associated with paralysis, muscle spasms, slurred speech, and hand tremors
- Amputation a limb removed due to trauma or disease



Figure 7. International symbol for persons with mobility impairments

People with mobility impairments who are in a medical facility as patients may have the following difficulties:

- Difficulty with coordination and moving between offices
- Difficulty with persistence and endurance while waiting
- Rapid fatigue
- Difficulty accessing facilities that others take for granted
- If their hands are affected, they may:
 - Having difficulty writing by hand
 - Not being able to write at all
 - To write slowly
 - Have difficulty turning the pages of medical leaflets and instructions for use
- If they have involuntary head movements, it can affect their ability to read even a standard size font

The main barriers that people with mobility impairments face in hospitals and other medical facilities are the following:

- Inaccessible or insufficiently accessible corridors and staircases of polyclinics and hospital buildings
- Too narrow elevators, entrances and corridors
- Entrance doors that are too heavy
- Revolving entrance doors
- Slippery floors
- Insufficient space for a person in a wheelchair or using other mobility aids (e.g. crutches)

- Lack of equipment to support a person's independence in the toilet or bathroom (e.g. handrail, handrails)
- Limited access to appropriate assistance that will enable existing barriers to be overcome

When communicating with persons who have mobility impairments, healthcare professionals should consider the following:

- Talk to them in a normal tone of voice (without shouting or speaking more slowly) the same way you would talk to anyone else
- Talk to the person like an adult and speak directly to them
- Ask if he/she needs assistance with getting around; don't assume help is needed
- When communicating with a person with a mobility impairment in a wheelchair, also sit so that you are at the same eye level so that you can maintain proper eye contact
- Be aware that the mobility impaired patient's personal space includes his/her wheelchair, crutches, cane, walker, or other assistive device; don't rely on your patients' aids
- Do a handshake; people who have limited hand function or have a prosthetic hand also do handshakes.
- Do not push or move the assisted mobility device (e.g. wheelchair) or pull the person without first asking if it is appropriate; otherwise, there is a serious risk of injury to both parties (doctor and patient)
- People adapt to disabilities in multiple ways; you should not associate personality traits with their disabilities
- A wheelchair is an extension of a person's body and should not be characterized as something that makes them "limited"
- Address the person with a mobility impairment directly, not their personal assistant or companion
- Do not insist on providing help if it is not requested; if the patient wishes, let him be assisted by his companion who knows his body and the kind of help he needs best
- Do not assume that a person with a motor disability is dependent on someone else; he can live completely autonomously and also not consider his disability a problem
- When you see a person with a mobility impairment in a medical facility, do not assume that he/she is a patient, as he/she may simply be accompanying someone else

The process of performing a review and in the treatment of patients with motor impairments, includes the following steps:

- Get ready
- Prepare the patient
- Prepare the equipment

Get ready

People with disabilities associated with reduced mobility have similar lifestyles to those without disabilities. Their dependence is not necessarily related to limited mobility as a result of the disability. In addition, motor disability is not associated with mental health or other health problems. Talk to the patient and find out the reason for his visit. It is important not to follow your prejudices and your own conclusions about his condition.

It found that medical staff tended to see disabled people only through the lens of 'personal tragedy'. However, it is important to remember that treating a patient with motor impairment may require more time to cover the full spectrum of their needs. For example, a woman in a wheelchair may need more time to have a mammogram, or an amputee may need more time to dress and undress, remove a prosthetic limb, transfer to the couch, and to be ready for research. Be patient, because otherwise, your patient may not be thoroughly examined simply because of lack of time.

Prepare the patient

People with disabilities know better what is going on in their own bodies most of the time. Surveys show that many feel they need to educate their doctors about health problems they have. For example, a person with a spinal cord injury may face problems such as bone loss, skin problems, diabetes, weight gain, a range of conditions related to paraplegia. General practitioners are not necessarily aware of this and should be informed by the patient. However, there must be a balance between empowering and respecting the knowledge that the disabled person has about their own body and giving them the responsibility of being the expert on their medical condition.

In this context, it is important to keep in mind that before the doctor takes any action, he must inform the patient in detail about the upcoming activities related to the examination in order to avoid a conflict between the parties.

Prepare the equipment

Structural barriers that exist in medical facilities include inaccessible rooms and equipment. These include both the internal and external features of the building in which the medical services are provided, including the lack of accessible seating for people with mobility impairments, the lack of ramps, narrow doorways, small waiting and examination rooms, and and inaccessible toilets.

For example, an inaccessible doctor's office, which may be located on a floor without an elevator, may prevent a patient with a mobility impairment from reaching it. It is also important to have the necessary space in the office so that the patient can maneuver with ease regardless of the aid they use.

Accessible equipment is extremely important. The lack of adjustable medical couches, as well as measuring devices (e.g. weighing scales) for wheelchair users, winches for lifting patients and the inaccessible diagnostic equipment, e.g. mammograms, may lead to underscreening of patients with motor impairments. There are many similar individuals whose weight or height have not been determined by medical personnel for years due to the lack of appropriate equipment.

Recommendations for the provision of quality medical services to persons with motor disabilities

A step	Justification
1. At the register and when giving	Check distance, weather conditions (especially if the
directions in general, consider the	patient has to leave the building), barriers to
accessibility of the proposed route	movement such as stairs, steps, width of doors, etc.
first	
2. Speak directly to the disabled	Do not address the disabled person's companion, if
person	present. People with mobility impairments do not
	need to be represented by someone else
3. Do a handshake	People who have limited hand function or have a
	prosthetic arm do handshakes too!
4. Ask if the person with a mobility	Many such individuals are completely autonomous
impairment needs assistance	and do not need help. Also, don't be afraid to ask
	what kind of help is needed and how to provide it
5. Don't insist on providing	Ask how you can better help regardless of the
assistance	assisted mobility device the patient uses. In case the
	person arrives with a personal assistant or a relative,
	let them be assisted by the attendant if they so prefer
6. Ask if room temperature is	There are people with motor disabilities who have
acceptable to the patient	problems with body temperature due to spinal cord
	damage. Make sure that the temperature in the
	room is suitable for performing the examination
7. Equal treatment	Do not rush to make a diagnosis based on the
	obvious fact that the underlying medical problem is
	related to the patient's disability. Give the person
	time to talk about their complaints and perform the
	hecessary medical actions related to the examination
9 If you need to holp a parcon in a	Climb up or down no more than one stop at a time
wheelchair up a flight of stairs	At the same time, tilt the wheelchair while going up
	or down with it
9 If you have to help a person in a	Hold the wheelchair's handles firmly to prevent it
wheelchair up an incline	from tinning over
10. Move any assistive device that	Return the aid back to its place immediately after the
the patient uses ONLY with their	examination is finished
permission	
11. Coordinate with the patient the	For a safer transfer from the wheelchair to the couch.
time before and during transfer to	the participants in this process must be fully
the hospital bed	coordinated. Before making any move, ask who will
	do the count, for example, or who will say go. In
	addition, ensure that both the wheelchair user and
	the location to which he/she will be moved are stable
	and the wheelchair wheels are locked

A step	Justification
12. Stand next to the patient after	Sometimes a person with a mobility impairment may
he is transferred from the couch	need some time to find their balance or stabilize
	themselves
13. Appropriate skills for moving the	 Transfer the weight to your legs, not your back
person with a mobility impairment	 Remember, pushing is easier than pulling
from their wheelchair to the	• Ask for help when needed. It is always better to ask
medical couch are important for	someone else for help than to risk injuring yourself
both your own safety and that of the	or your patient
patient	• Make sure your patient understands what you are
	doing and suggest a way he/she can help you
	• Hold the patient close to your body to provide
	support and stability
	Step 1 Step 2
	Step 3 Step 4
14. Some people can walk but may	Watch the national carefully to ensure that he deep
he week or unsteady on their feet	not fall while moving. Stand on his /hor work side or
be weak of unsteady on their leet	if ho/cho can walk independently, you can stand a
	in ne/site can walk independently, you can stand a
	short distance bernnu min / ner . De prepared to react
	When this hannens, help the nations sit down until
	he is ready to continue
15. If a person with an amputated	Give the national time and respect the person's
limb needs to remove their	nersonal dignity during this time. If necessary if
nrosthesis	there is a place to change null the curtain or turn
prostricaia	your back to it for a while
	your back to it for a write

After the review is over:

- Follow the steps for transferring the patient from the couch to their wheelchair in reverse order
- Ask if the patient is comfortable or if there is anything that is bothering them
- Give your patient some time to calm down and recover

• Ask if your treatment instructions are understood and if assistance is needed when leaving the office/hospital

Questions for self-assessment of your work:

- Have you given all the instructions the patient needs for their proper treatment?
- Have you informed him of the actions you can take during the review to help him move?
- Do you think your back was in the right position to prevent injury when transferring the patient from the wheelchair to the couch and back?
- Did you perform any actions that could have injured the patient?
- Do you think he/she is satisfied with the review?
- Is there a behavior/action that you displayed/performed that you could have avoided?
- Did you do something that the patient felt was troubling or not applicable to his/her situation?
- What was the most difficult for you during the patient interaction and examination?
- Were you able to offer the help the patient needed?

Do not forget:

- Always ask the patient what assistance they need
- Do not move mobility aids without the patient's consent
- Do not pull the wheelchair or take any other assistive device to the patient without having agreed with the patient
- Your safety is important so you can help the patient
- Always address the patient directly, not their attendants, if present
- A person with a motor impairment may visit the doctor for many different reasons, not just those related to their visible impairment

5.3. Improving access to medical services for people with hearing impairments

The term "hearing impairment" describes hearing loss, which can range from mild (hard of hearing) to total hearing loss (total deafness). There are several causes of hearing loss. Some people are born with a lack of hearing, and others lose their hearing due to trauma. Some hearing impairments are caused by diseases or by working in very noisy places.

Sounds are characterized by intensity and frequency:

- The intensity of sounds is measured in decibels (dB)
- The frequency of sound is measured in hertz (Hz), and hearing-impaired individuals are more likely to have impaired high perceptual clarity



Figure 8. Classification of hearing loss

Source: Hearing Research International

People with hearing loss may experience one or more of the following difficulties:

- If they rely on their eyes to communicate with others (for example, lip reading, sign language), they need to be able to see the face of the person speaking
- Human speech is very different from sign language (SL), which is based on hand movements, gestures and facial expressions. If the patient communicates only through ENT, you need the services of a sign interpreter to communicate with the patient
- If people are born with a lack of hearing, they may not be able to speak at all
- People who can hear develop their general knowledge by reading newspapers, listening to the radio or television, and by talking to friends and family. Hearing-impaired patients may have problems with consistency, grammar, or the overall structure of writing

Not everyone with a total or partial hearing loss has the limitations listed above, nor does everyone have them to the same degree.

The causes of hearing loss can be different:

- Hereditary factors
- Birth trauma: mainly physical during birth with forceps, vacuum extractor and with asphyxia
- Pathogenic influences in the prenatal period
- Inflammation of the middle ear (otitis)

- Infectious diseases that can lead to permanent defects of the middle and inner ear (scarlet fever, rubella, mumps, meningitis, severe forms of influenza)
- Drug overdose (eg streptomycin, gentamicin, etc.)
- Injuries with a late-traumatic nature of the inner or middle ear
- Barotrauma
- Prolonged exposure to loud noise (e.g. in a work environment)

There are many causes of temporary hearing loss, including the presence of earwax, medication, or an ear infection.

Four degrees of hearing loss are distinguished, assuming that the audibility norm is from 0 to 25 dB:

- Grade 1: hearing loss does not exceed 50 dB
- Grade 2: hearing loss is 50 to 70 dB
- Grade 3: hearing loss exceeds 70 dB. Here we can already talk about partial deafness
- Total deafness: hearing loss greater than 80 dB

People with **hearing disorders** are divided into:

- Hard of hearing with underdevelopment of speech
- Hard of hearing with minimal speech impairments
- Deaf late-onset deaf with some speech experience
- Deaf early deaf with no speech experience

The period of the initial formation and development of speech is taken as the boundary between early and late deafness.

Characteristics of people with late-life hearing loss or with cochlear implants are:

- Their speech may be developed
- They usually do not hear any sounds, or in the case of cochlear implants, hear limited sounds
- They often do not know sign language

People with mild hearing impairment:

- They may or may not use a hearing aid
- Their main problem is not hearing, but understanding speech. Hearing impairments limit the flow of information to the brain and thus affect the process of understanding speech, especially in the presence of noise or from a long distance
- People with mild hearing loss often claim, "I can hear, but I can't understand you."

A hearing aid is only a device and has many limitations.

People with severe hearing impairment:

- They may use hearing aids; when they remove the device, their hearing is extremely poor
- Even with a hearing aid, they have significant problems understanding speech; sounds are difficult for them to distinguish

People with hearing impairments experience difficulties in obtaining medical services, either in public hospitals or in private clinics. In particular, in relation to public hospitals, deaf people face red tape, but the biggest problem remains communication – not only about diagnosing the disease, but also about its treatment. The problem becomes even more complicated when verbal instructions are given to the patient.



Figure 9. International symbol of the hearing impaired

How medical personnel can recognize a hearing impaired person

Health professionals should be informed how to recognize the specific behavior of patients who are hearing impaired , for example:

- They may not answer the first call
- They may point to their ear to justify their actions or prevent other people's behavior
- They may use sign language
- They may use hearing aids or have cochlear implants
- They may have difficulty speaking or have an unusual accent
- Their speech may show errors in the grammatical order of words or place stresses in unusual places
- They may be intensely focused on other people's faces or lips
- They may ask others to repeat the question or require repeated explanations

- They may often ask "what?"
- They may look for places with adequate light to communicate
- They may avoid joining discussions with many people they may come across as antisocial or withdrawn
- Their contribution to group discussions may be limited, and because they do not have a good enough command of words, they suspect that they may not be fully understood
- They may avoid communication answering affirmatively or negatively by nodding their head, answering very vaguely or tending to change the topic of conversation to something more general and controllable from their point of view
- They may find it difficult to follow complex instructions misunderstandings or misconceptions are common in communication with them
- They may be the last to finish their tasks
- They may depend on seeing what other people are doing rather than following the instructions given to them
- They may speak low and deep or with an unusual tone and intensity of voice

Communication between medical staff and patients with hearing loss is usually incomplete, leaving neither party satisfied. It is extremely important to look for possible alternative ways of communication. For example, one of the most common malpractices is when medical staff talk behind the patient's back, have a mask over their mouth, or are turned away, preventing eye contact and therefore lip reading. In particular, dentists who wear protective masks create a huge barrier to the lip reading process.

Most patients feel vulnerable during medical examinations. In addition, hearingimpaired patients felt that information was not accessible at all. It should also be noted that, for convenience and speed, physicians often find it easier to speak to a family member of a hearing-impaired patient rather than the deaf patient, thereby shifting responsibility for the deaf patient to the family member. to his family as if the patient were a minor. This practice can lead to a deterioration in the patient's health, a weakening of the doctor-patient relationship, and an increase in the risk of medical error.

Therefore, medical staff must respect each patient's communication options according to their needs, whether it is written communication, use of a sign language interpreter, lip reading, or examination in a quiet and well-lit area, or a combination of the above, without to impose time limits or interruptions.

If the doctor or patient feels that their words are not understood, the medical person should repeat, paraphrase or write the necessary information on paper. In addition, the body language of the staff, such as facial expressions and movements, smiles, figurative descriptions with hands or signs can be used as context and help the hearing impaired to understand better.

If the patient is accompanied by a sign language interpreter, the staff should address the patient's hearing limitations, speak naturally but also with short interruptions to allow time for an accurate translation and also for the patient and the doctor to have time to review available material (e.g., medical examination results, x-ray, recovery instructions, etc.).

The most important components for successful communication are the following:

- Providing an opportunity to read lips
- Calling hearing-impaired patients from the waiting room to the doctor's office by visual means

- Maintain eye contact with staff
- Adequate lighting of the room

In addition, it is assumed that there should be a quiet environment with no external noises to distract the hearing impaired, as well as slow speech by medical professionals. Depending on the circumstances, the discussion topic should be determined at the beginning of the communication and relatively simple vocabulary should be used within short sentences. In the event that a deaf patient wears an epicrisis, it must indicate his hearing status.

In conclusion, the presence of a physical or other disability should not limit patients' access to the healthcare system. Healthcare workers have a major role in this process, who should provide the best services to their patients. For this purpose, besides being well-intentioned, they should be adequately informed about the specifics that characterize the process of diagnosis and treatment of persons with disabilities, so that they can achieve the best results in the process of their treatment.