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Strengthening primary Medical care in IsoLated and deprived cross-border arEas

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Joint PHC Practitioners' Training Scheme – Educational Material

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Description:	The current document is the educational material related to Deliverable 5.2.1. This SMiLe project deliverable aspires to introduce to interested health professionals the concept of disability, present the different models of disability, describe the notions of stereotypes and stigma and provide useful information that could lead to the improvement of the provided health services.
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Short presentation of the programme

The Cooperation Programme "Greece-Bulgaria 2014-2020" was approved by the European Commission on 09/09/2015 by Decision C(2015) 6283. The total budget (ERDF and national contribution) for the European Territorial Programme "Greece-Bulgaria 2007-2013" is €129,695,572.00. The total financing consists of €110.241.234,00 (85%) ERDF funding and €19.434.338,00 (15%) national contribution. The eligible area of the Programme consists of the Region of Eastern Macedonia-Thrace (Regional Units of Evros, Kavala, Xanthi, Rodopi and Drama) and the Region of Central Macedonia (Regional Units of Thessaloniki and Serres) in Greece and the South-Central Planning Region and South-West Planning Region (Districts of Blagoevgrad, Smolyan, Kardjali and Haskovo) in Bulgaria. The Priority Axes are PA 1: A competitive and Innovative Cross-Border area, PA 2: A Sustainable and climate adaptable Cross-Border area PA, 3: A better interconnected Cross-Border area, PA 4: A socially inclusive Cross-Border area.

Abbreviations

AF: Application Form

CB: Cross Border (area)

JoB: justification of Budget

JS: Joins Secretariat

LB: Lead Beneficiary

MA: Managing Authority

PB: Partner beneficiary

STPP: Start-up Time Plan and Procurement Plan

WBS: Work breakdown structure

Table of Contents

1 Introduction 10
1.1 Medical and biopsychosocial model of disability 10
1.2 Social disability model 13
1.3 Prejudice, Stereotype & Discrimination 15
1.4 Stigma 18
2 Disability and access to health services 21
3 Access of persons with visual impairment to the health system 25
3.1 Definition 25
3.2 Consideration or Key points 25
3.3 Prerequisite knowledge 25
3.4 Theoretical Background 25
3.5 The causes 25
3.6 Demographics 26
3.7 The Greek case 26
3.8 Effect of visual impairment on the individual 26
3.9 Framework 26
3.9.1 Access to the health system 26
3.9.2 How do we recognize a visually impaired person? 27
3.10 Process 28
3.10.1 Ways to improve health services 28
3.10.2 Communication skills 28
3.10.3 Hospitalization 29
3.10.4 Use of technical aids and new technologies 29
3.10.5 Step by step guide on communication 32
3.10.6 Sighted guide techniques 34
3.11 After the process 38
3.12 Evaluation 38
3.13 Reminder 38
3.14 Patient scenarios 38
4 Access of persons with mobility impairment to the health system 39
4.1 Definition 39
4.2 Consideration or key points 39
4.3 Prerequisite knowledge 39
4.4 Theoretical background 39
4.5 The causes 40
4.6 Anatomical elements 42

4.7 Keep in mind 43
4.8 Process 44
4.8.1 Prepare yourself 44
4.8.2 Prepare the patient 44
4.8.3 Prepare the equipment 44
4.9 Step by step guide on health provision to mobility impaired patients 45
4.10 After the process 48
4.11 Evaluation 48
4.12 Reminder 49
4.13 Further learning opportunities 49
4.14 Patient scenarios 49
5 Access of persons with hearing impairment to the health system 51
5.1 Definition 51
5.2 The causes 52
5.3 Demographics 52
5.4 Framework 53
5.4.1 Access to the health system 53
5.4.2 How do we recognize a person with hearing loss? 54
5.5 Process 55
5.5.1 Best communication practices 55
5.6 Patient scenarios 58
6 Access barriers 59
6.1 Introduction 59
6.2 Accessibility guidelines 63
6.2.1 Configuration of external areas for pedestrian movement 64
6.2.2 Design of parking spaces 67
6.2.3 Buildings used by the general public 68
6.2.4 Ramps 70
6.2.5 Stairs and staircases 73
6.2.6 Mechanical means for connecting different levels 74
6.2.7 Signage 79
6.2.8 Buildings entrances 81
6.2.9 Public toilets 83
6.2.10 Accessible examination rooms 86

List of Tables and Figures

Figure 1 : Signature box 27
Figure 2 : Written instructions 28
Figure 3 : Braille notebook 29
Figure 4 : Pill organizer 29
Figure 5 : Dosing device 30
Figure 6 : Eye drop device 30
Figure 7 : Pen friend 30
Figure 8 : Audible thermometer 31
Figure 9 : Audible blood pressure monitor 31
Figure 10 : Audible scale 31
Figure 11 : Audible glucose monitor 31
Figure 12 : Face to face communication 32
Figure 13 : Examination of patient 33
Figure 14 : Examination of patient 33
Figure 15 : Explanation of objects' location 34
Figure 16 : Making your presence known 34
Figure 17 : Basic hold 35
Figure 18 : Progressing through narrow passages 35
Figure 19 : Changing hand 36
Figure 20 : Direction change 36
Figure 21 : Leading a person to a chair 36
Figure 22 : Passing through a door 37
Figure 23 : Escorting on a staircase 37
Figure 24 : Organization of the spinal cord 40
Figure 25 : Anatomy of lower limb 43
Figure 26 : Check accessibility 45
Figure 27 : Talk directly 45
Figure 28 : Make a handshake 46
Figure 29 : Do not insist on providing assistance 46
Figure 30 : Steps of transfer 47
Figure 31 : Assisting a crutch user 48
Figure 32 : Severity of hearing loss 51
Figure 32 : Pavement width 64
Figure 33 : Signage 66
Figure 34 : Kerb ramps 66
Figure 35 : Parking spaces 67
Figure 36 : Ramp 71

Figure 37 : Ramp 71
Figure 38 : Ramp equipment 72
Figure 39 : Recommended design, recommended handrails 73
Figure 40 : Recommended handrail design 74
Figure 41 : Design of typical lift 75
Figure 42: Design of typical lift. KA = seat, κ = alarm button, x = buttons 75
Figure 43: Chambers K = seat, X = buttons 76
Figure 44: Equipment 76
Figure 45: Control buttons 77
Figure 46: Lift dimensions for large wheelchairs and for stretchers 78
Figure 47: International Symbol of Access (white on black or blue) 79
Figure 48: Signage examples 80
Figure 49: Vestibules 82
Figure 50: Door types 83
Figure 51: Equipment 85
Figure 52: Design of shower 85
Figure 53: Equipment 86

1 Introduction

Disability is a complex phenomenon, which extends from the body to the society. It is an evolving concept that involves the interaction between disabled persons, environmental obstacles, and prejudices. Full and effective participation of disabled persons in society on equal terms is hindered by those barriers. As it is understood, specific terms, such as "impairment", mediate on the meaning of the concept of 'disability' and in parallel are connected with the initial meaning of the term.

The meaning, the idea, the notion of disability has changed considerably over the years. The disabled people's movement has mainly contributed to this process, in parallel with the growth of social sciences. Nowadays, we can accept that there are two main models of disability, the medical and the social one.

Smart defined models of disability in this way: "A model is a set of guiding assumptions, concerns, and propositions about the nature of phenomena or human experience. Models have often been defined as human-made tools for understanding and human-made guidelines for action".[1]

The importance of the various models of disability is due to the fact that they are linked with shaping people's perceptions and ideas about disabled persons. As Smart points out, such models serve a number of important purposes:

- Models of disability provide definitions of disability.
- Models of disability provide explanations of causal attribution and responsibility attributions.
- Models of disability are based on (perceived) needs.
- Models guide the formulation and implementation of policy.
- Models of disability are not value neutral.
- Models of disability determine which academic disciplines study and learn about PWDs.
- Models of disability shape the self-identity of disabled persons.
- Models of disability can cause prejudice and discrimination.[2]

1.1 Medical and biopsychosocial model of disability

Until the 1980s, the prevailing model in the disability area was the medical one, which is based on physiology. According to this, disabled people are deemed in need of medical treatment, which can only be provided by specialists. The medical model sees disability as a physical or mental impairment and therefore the person is facing personal and social consequences.

1 Smart, J. F. (2001). Disability, society, and the individual. Austin, TX: Pro-Ed.

2 Smart, J., 2004, 'Models of disability: The juxtaposition of biology and social construction', in T. Riggar & D. Maki (eds.), Handbook of rehabilitation counseling, pp. 25–49, Springer, New York.

Thus, the restrictions and obstacles that disabled people face arise primarily or solely from their body's limitations.

In order to establish the presence of a disability (or pathology), diagnostic testing and assessment are necessary. In 1980 the World Health Organization (WHO) created a health classification system of health and disability known as the International Classification of Impairment, Disability and Handicap (ICIDH). According to it, there were threefold divisions which were reflected as:

- Impairment: "Any loss or abnormality of psychological, physiological or anatomical structure or function".
- Disability: "Any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being".
- Handicap: "A disadvantage for a given individual, resulting from an impairment or disability, that limits or prevents the fulfilment of a role (depending on age, sex, social and cultural factors) for that individual"

Bickenbach defined the biomedical model of disability as the following: "The most commonly held belief about (this model of) disablement is that it involves a defect, deficiency, dysfunctional, abnormality, failing or medical "problem" that is located within the individual. We think it is so obvious as to be beyond serious dispute that disablement is a characteristic of a defective person, someone who is functionally limited or anatomically abnormal, diseased, pathoanatomical, someone who is neither whole or healthy, fit or flourishing, someone who is biologically inferior or subnormal. The essence of disablement, in this view, is that there is something wrong with people with disabilities".[3]

This model caused severe reactions in the disabled people's movement. The main criticism is that it focused on people's impairments, which are seen as the causes of the barriers they face in achieving their daily activities (disability) and fulfil their social roles (handicap). Every individual with a disability, regardless of their privilege, economic resources, education, or achievements, knows that they belong to a devalued group, and many individuals with disabilities (especially the Deaf) feel there is nothing to be gained by trying to assimilate into society that devalues them. Indeed, the biomedical model considers people with disabilities to be people who have adjustments and adaptations to make. A perfect world, according to the biomedical model, is a world without disabilities. Disabilities are to be prevented.[4] Therefore, the solution is to treat and rehabilitate the impairment, so health and social welfare professionals emphasize the needs that arise from the impairments and not disabled people's experiences.[5]

3 Bickenbach, J. E. (1993). Physical disability and social policy. Toronto: University of Toronto.

4 Smart, J., 2004, 'Models of disability: The juxtaposition of biology and social construction', in T. Riggar & D. Maki (eds.), Handbook of rehabilitation counseling, pp. 25–49, Springer, New York.

5 Barnes, C. and Mercer, G. (2003). Disability. Cambridge: Polity Press

Thus, according to the above, disability has to do with each individual's "deficit" and personal problem as compared with "normal" people.[6] Policies for disability are limited to those involving medical interventions, maintaining in this way attitudes and behaviours related to the patient's idea of "abnormality", reproducing discrimination and creating conditions for social exclusion.[7]

The World Health Organization has shifted the notion to a new model of disability, the biopsychosocial. In this, disability is understood through the interaction of biological, psychological and social factors. This is presented in the International Classification of Functioning, Disability and Health[8] (ICF) which advanced the understanding and measurement of disability. The ICF emphasizes environmental factors in creating disability, which is the main difference between this new classification and the previous International Classification of Impairments, Disabilities, and Handicaps (ICIDH).

In the ICF, problems with human functioning are categorized in three interconnected areas:

- impairments are problems in body function or alterations in body structure – for example, paralysis or blindness;
- activity limitations are difficulties in executing activities – for example, walking or eating;
- participation restrictions are problems with involvement in any area of life – for example, facing discrimination in employment or transportation.

Disability refers to difficulties encountered in any or all three areas of functioning. The ICF can also be used to understand and measure the positive aspects of functioning such as body functions, activities, participation and environmental facilitation. ICF adopts neutral language and does not distinguish between the type and cause of disability – for instance, between "physical" and "mental" health. "Health conditions" are diseases, injuries, and disorders, while "impairments" are specific decrements in body functions and structures, often identified as symptoms or signs of health conditions. Disability arises from the interaction of health conditions with contextual factors – environmental and personal factors.

The ICF contains a classification of environmental factors describing the world in which people with different levels of functioning must live and act. These factors can be either facilitators or barriers. Environmental factors include: products and technology; the natural and built environment; support and relationships; attitudes; and services, systems, and policies. The ICF also recognizes personal factors, such as motivation and self-esteem, which can influence how much a person participates in society. However, these factors are not yet conceptualized

6 Abberley, P. (1999). The significance of work for the citizenship of disabled people. Paper presented at University College Dublin, 15. April 1999. Retrieved February 15, 2016 from http://disability-studies.leeds.ac.uk/files/library/Abberley-sigofwork.pdf .

7 E.S.AmeA. (National Confederation of Persons with disability) (2014). Policy planning in disability-trainee manual. Athens.

8 WHO (2001) International Classification of Functioning, Disability and Health (ICF)

or classified. It further distinguishes between a person's capacities to perform actions and the actual performance of those actions in real life, a subtle difference that helps illuminate the effect of environment and how performance might be improved by modifying the environment.[9]

Although the last review mentions the environmental barriers that disabled people face, the starting point remains the individual and does not recognize disability as a social phenomenon, which derives from the barriers that society impose against the equal participation of disabled people.[10]

In the above definition, it seems to be implied that there are biological and medical standards that can describe the structure and function of human capacity. Such "normal" characteristics depend to some extent on a society which produces patterns of "normality".[11]

The notion of "normality" has also been questioned by the field of Medicine and Philosophy. Georges Canguilhem approaches the terms such as pathological and normal by reading the process that identifies the terms. As he says: "Arranging [normer], normalizing [normaliser], means imposing a claim to a presence, whose diversity and heterogeneity, is shown from the perspective of the claimant, as indeterminacy more hostile than simply paradoxical".[12]

To the general public, the biomedical model is the most familiar and best understood conception of disability. Two factors contribute to this: the long history of the model and the (seemingly) objective and scientific classification and diagnosis systems that render the biomedical model intuitively understandable to most people.[13] Bickenbach has proposed a third explanation for the public's facile acceptance of the biomedical model, positing that this model has roots in a religious belief system in which disability was often viewed as a moral defect or the product of sin. Biological wholeness is viewed as virtue and righteousness. Therefore, the biomedical model appeared to add scientific confirmation to these religious beliefs.[14]

1.2 Social disability model

The social perception of disability has been developed in contrast to the medical model approach. The diversity and the heterogeneity that disability includes is, by itself, challenging

9 World Health Organization (2011). World Report on Disability. Geneva: W.H.O.

10 Barnes, C. and Mercer, G. (2004) Theorising and researching Disability from a social model perspective, in Barnes, C. and Mercer, G. Implementing the Social Model of Disability: Theory and Research Leeds: The Disability Press 2004.

11 Wendell, S. (1996). The Rejected Body. New York: Routledge.

12 Canguilhem, G. (2007). The Normal and the Pathological. Athens: Nissos Publications.

13 Smart, J., 2004, 'Models of disability: The juxtaposition of biology and social construction', in T. Riggar & D. Maki (eds.), Handbook of rehabilitation counseling, pp. 25–49, Springer, New York.

14 Bickenbach, J. E. (1993). Physical disability and social policy. Toronto: University of Toronto.

to the medical norm. Disability as a social construction, is approached from different perspectives that do not always mean the same thing.[15]

In general, the social model of disability tries to shift the medical perspective of disability. According to it, the social exclusion that disabled people face is caused by the inadequacies of the environment as well as existing barriers and culture, and not from the individual's limitations in the functionality or health problems.[16] It is society 'which disables people with impairments, and therefore any meaningful solution must be directed at societal change rather than individual adjustment and rehabilitation'.[17] Disability is defined as a social and civil construction, meaning that there is nothing inherent in a disability or individuals with disabilities that warrants prejudices, stereotypes, and reduced opportunities.

Around 1976 activists with disabilities in England questioned the hitherto theoretical framework on disability claiming their rights. The principle text of the social model of disability is the "Fundamental Principles of Disability" by UPIAS - Union of the Physically Impaired Against Segregation. For the first time it was heard by disabled people themselves that society is the one which "disables" people with impairments and that disability is something imposed on top of people's impairments, in a way that unnecessarily isolates and prevents the equal, full participation in society.

The definitions according to the social model are the following:

- Impairment: Lacking part or all of a limb, or having a defective limb or mechanism of the body.
- Disability: The disadvantage of restriction of activity caused by a contemporary social organisation which takes no or little account of people who have physical impairments and thus excludes them from participation in the mainstream of social activities.[18]

The above model has changed the meaning of disability, arguing that restrictions and barriers faced by disabled people do not rise from body limitations or functioning, but they are a result of the way society is structured and how it responds to people who have impairments. Furthermore, it does not address the problems separately but in a broader context of barriers. However, it should be clear that the social model of disability does not reject medical interventions and rehabilitation interventions as not helpful to people with disabilities.[19]

Schipper explained the importance of the distinction between impairment and disability in the development of the social model: "These definitions provided a theoretical underpinning for

15 Wendell, S. (1996). The Rejected Body. New York: Routledge.

16 Barnes, C. and Mercer, G. (2003). Disability. Cambridge: Polity Press.

17 Barnes, C., Mercer, G. & Shakespeare, T., 2010, 'The social model of disability', in A. Giddens & P. Sutton (eds.), Sociology: Introductory readings, 3rd edn., pp. 161–166, Polity Press, Cambridge.

18 UPIAS (1976). Fundamental Principles of Disability. London: UPIAS.

19 Oliver, M. (1996). Defining impairment and disability: Issues at stake, in Barnes C. and Mercer G. (Eds.). Exploring the Divide. Leeds: The Disability Press.

the social model by making a clear distinction between social disability and physical impairment. While an impairment is universally constant (e.g. the inability to conceive children), the extent to which this impairment has social/political consequences shifts from culture to culture (i.e. the inability to conceive children may be more 'disabling' in ancient Near Eastern cultures than in industrialized Western ones)".[20]

Disability policies have been underpinned by the perception of disabled people as "having something wrong with them" and therefore they are a problem to be dealt with. Therefore, the approach of the medical model is based on the notion of "personal tragedy" and individual's responsibility, while the social model focuses on the constraints and obstacles which are related to the model of social organization, which does not include people who differ thus excluding them from its activities.

In the social model, people with disabilities claim the right to define disability— both the experience of having a disability and the ways in which to respond. But, in contrast to biomedical model, the socio-political model has no academic/professional field of expertise to provide a theoretical foundation. As we have seen, the appeal to a single field of expertise has four results: First, the professional field defines and describes disability and its treatment; second, a power differential is put into place; third, and perhaps most important, people with disabilities are segmented and stratified by varying classification systems, service providers, and bureaucratic organizations; and fourth, it excuses society from the need to respond, simply because the public thinks that professionals can and do meet all needs of people with disabilities. Stated differently, models that have professional fields of expertise diffuse responsibility for disability among the differing types of service providers.[21]

Finally, it should also be noted that social model theorists consider the term 'people with disabilities' as directly linked to the philosophy underlying the medical model. Therefore, they propose that the term 'disabled people' better reflects the reality people with impairments face every day.

In the following pages an analysis on these specific terms and particularly of the notions of prejudice, stereotype, discrimination and (social) stigma is attempted.

1.3 Prejudice, Stereotype & Discrimination

There is an interesting set of notions which connects human behaviour with obstacles that appear in society. Such types of behaviour have a negative impact on people from socially vulnerable groups, including people with disabilities.

Behaviours and attitudes like "prejudice" and "stereotype" appear in many cases when the other is unknown, or when there is little information about him/her, or even when there are misleading information on a person or a group.

20 Schipper, J., 2006, Disability studies and the Hebrew Bible, T & T Clark, New York.

21 Smart, J., 2004, 'Models of disability: The juxtaposition of biology and social construction', in T. Riggar & D. Maki (eds.), Handbook of rehabilitation counseling, pp. 25–49, Springer, New York.

The function of these "mechanisms" of human mind is known and is applied to many persons and groups. A well-known example is the case of gender. Even though the social gap between the sexes becomes smaller, there are still significant differences that appear in the interaction with people in the social environment. The interactions and reactions formulate the behaviour and the identity of the person. In this way, 'prejudice' and 'stereotype' function in social conditions, groups, people.

Prejudice is an important concept for the study of social groups. As Hogg & Vaughan mention[22], "prejudice" is connected with 'prejudgement' (Latin "prae and judicium"). The distinction as behaviour is directed to a social group (like Europeans, Americans, Indians, immigrants). The concept is further defined as a negative or hostile attitude towards members of a group, not because of the characteristics they have, but because they belong to this group.[23]

Prejudice can also be connected with a discriminatory behaviour. Social attitudes, cognitive beliefs, strong feelings can have a negative affect or even create a hostile behaviour toward a social group. This relationship between attitude and behaviour, "…is the relationship between prejudiced beliefs and the practice of discrimination"[24].

There have been some important attempts to focus on the social side of prejudice, particularly by studying how individuals communicate their stereotypes and prejudices, and the effects of communication on beliefs. According to Stangor "most fundamentally, stereotypes and prejudice are social norms. This is an old idea, and one that perhaps isn't that sexy in today's context—but it is in fact the most important way we think about social stereotypes. In short, people hold and express stereotypes and prejudice to the extent that they see it as appropriate, within their social contexts, to do so."[25]

Before we approach discrimination, it is useful to define "stereotype". Stereotype is a broad and negative evaluative scheme for members of a group. A stereotype can be active, even if someone is aware about its existence.

There seems to be a correlation between the personal belief and cultural stereotypes. In the model proposed by Patricia Devine, personal convictions meet the cultural level where stereotypes exist. Stereotypes have a long history of activation and often contradict personal

22 Hogg, M. & Vaughan, G. (2011). Social Psychology. Essex: Pearson Education Limited.

23 Hughes M. & Kroehler, C. (2011). Sociology, the Core. N.Y.: McGraw Hill.

24 Hogg, M. & Vaughan, G. (2011). Social Psychology.

25 Stangor, C. (2009). The study of stereotyping, prejudice, and discrimination within social psychology: A quick history of theory and research. In T. D. Nelson (Ed.), Handbook of prejudice, stereotyping, and discrimination (pp. 1-22). New York, NY, US: Psychology Press.

beliefs. Indeed, a person may experience an internal conflict between the beliefs that are more recent and stereotypes that are ingrained in him.[26]

Stereotypical attitudes are likely to become prejudices. In this way, the personal meets the cultural level and also the established attitude collides with the recent beliefs. Discrimination is associated with stereotypical attitudes and prejudices. While prejudice is an attitude, discrimination is an action.

"Discrimination is a process in which members of one or more groups or categories in society are denied the privileges, prestige, power, legal rights, equal protection of the law, and other societal benefits that are available to members of other groups. Discrimination is a form of racism when those discriminated against are a racial minority".[27]

Despite the above, it is undeniable that attitudes concerning disabled persons have been improved over the last 35 years. This is true for people with physical disability but it has not been fully extended to the group of persons with mental disability. People who live in Western societies tend to neglect mental disabilities and not undertake their responsibilities to these individuals.

This is reflected in remarkably low funding for research into most mental illnesses and poor resourcing for the care and therapy of psychiatric patients. Since the early 1980s there has been a policy in, for example, Britain and the United States to 'deinstitutionalise' chronic psychiatric patients and simply to release them on to the streets: that is, to release them from hospital without providing adequate alternative community resources for their support.

There are different forms of discrimination. Discrimination can have an overt facet, but it can also not be that obvious. This kind of "hidden" discrimination can be: a) reluctance to help, b) tokenism, c) reverse discrimination.[28]

Reluctance to help people and social groups that are disadvantaged, certainly affects their effort to improve their position. A passive or active denial to assist disabled persons can be an obstacle for claiming equal opportunities.

Tokenism is a very small act for a social group or a minority group. This action is used for deflecting any accusation for discrimination and also for denying more active assistance to the members of the group. So we can define tokenism as an action that is associated with very small concessions to persons belonging to a minority, so as to avert the label of discrimination.

Sometimes tokenism can turn to reverse discrimination. This is a radical form of tokenism and it happens when "…people with residual prejudiced attitudes … go out of their way to favour

26 Devine, P. G. (1989). Stereotypes and Prejudice: Their Automatic and Controlled Components. Journal of Personality and Social Psychology, Vol. 56, No. 1,5-18.

27 Hughes M. & Kroehler, C. (2011). Sociology, the Core. N.Y.: McGraw Hill.

28 Hogg, M. & Vaughan, G. (2011). Social Psychology. Essex: Pearson Education Limited.

members of a group against which they are prejudiced more than members of other groups".[29]

1.4 Stigma

Prejudice and discrimination have specific negative effects, causing some inconvenience or even suffering to the victims. One of these effects is stigma, which is a result of prejudice that stigmatises groups and persons that are members of minority groups.

The term 'stigma' can be found in many languages and has roots that lead us to the ancient Greek and to the Latin language. The word was originally connected with a mark made by a pointed instrument. It is also referred to as a puncture or a tattoo-mark or even a brand. The root of the word comes from ancient Greek and the term stizein which means "to mark" or "tattoo".

As Erving Goffman[30] mentions, the Greeks used this term to refer to marks on the body, which are used to indicate something strange and negative for the moral status of the individual. These signs were engraved or cut the body to indicate that the person is a traitor, slave, profane or criminal.

Stigma is connected with the body, as an indelible mark on skin that can be made with a bump, or an etching instrument or even cauterization. Another aspect of stigma, is connected with a moral stain. Stigma is specified in relationships which are socially defined. And is a term used to indicate certain negative and discrediting characteristics.

Stigma can be defined as elements, characteristics or attributes that an individual or a group possess.[31] These characteristics transmit "… a social identity that is devalued in a particular social context".[32]

Herek defines stigma as "the negative regard, inferior status, and relative powerlessness that society collectively accords to people who possess a particular characteristic or belong to a particular group or category".[33] This shift moves the source of stigma out of the bodies and identities of the stigmatized and places the origins of stigma at the societal level. Frost argues that laws, policies, religions, and other institutional structures are constructed in ways that reflect the negative meanings attached to stigmatized groups and individuals. The rights, freedoms, and resources of the stigmatized are limited compared to the non-stigmatized. Structural inequalities both stem from and perpetuate social stigma by reinforcing negative connotations of stigmatized groups via limiting their participation in society. If certain groups

29 Hogg, M. & Vaughan, G. (2011). Social Psychology.

30 Goffman, E. (1991) Stigma: Notes on the Management of Spoiled Identity, Penguin Books

31 Crocker, J., Major, B., & Steele, C. (1998). Social stigma. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), The handbook of social psychology (pp. 504-553). New York, NY, US: McGraw-Hill.

32 Hogg, M. & Vaughan, G. (2011). Social Psychology. p. 376

33 Herek, G. M. (2009a). Sexual prejudice. In T. D. Nelson (Ed.), Handbook of prejudice, stereotyping, and discrimination (pp. 441-467). New York, NY US: Psychology Press.

are prevented from fully participating in society, their social status will remain "less than" non-stigmatized groups, which is often perceived as legitimizing prevailing social stigma. Those who are allowed full participation in society become established as normal, and those who do not are marginalized.[34]

Social settings establish the categories of persons likely to be encountered there. The routines of social intercourse in established settings allow us to deal with anticipated others without special attention or thought. When a stranger comes into our presence, then, first appearances are likely to enable us to anticipate his category and attributes, his `social identity'.[35]

Social Stigma is connected with two elements: visibility/concealability and controllability. In the case of a visible sigma, the person or the group that are stigmatised, cannot avoid discrimination against them. In the case of a concealable stigma, the stigmatised persons can avoid the experience of prejudice.[36] Finally, in controllable stigma people that are stigmatised have the responsibility to choose (obesity, smoking). Or even better, if we want to mention a collective dimension of the term stigma, three grossly different types of stigma may be mentioned. First there are abominations of the body - the various physical deformities. Next there are blemishes of individual character perceived as weak will, domineering or unnatural passions, treacherous and rigid beliefs, and dishonesty. Finally there are the tribal stigma of race, nation, and religion, these being stigma that can be transmitted through lineages and equally contaminate all members of a family.'[37]

As a social relationship, stigma has a particular function. It can legitimize a state dominated by inequalities and privileges of the ruling class. The social groups which are favoured will ensure that the stigma remains in place, since it serves the status quo.

So, there is an invisible ''thread'' that connects sigma with inequality and power. In this way stigma can become a barrier for vulnerable social groups and for persons with disability. Negative images, language that degrades the other, stereotypes and stigma have a long period of existence, particularly in relation to people with disabilities around the world.[38]

There is also a connection of stigma with politics. The stigma that is defined for a group or an individual, depends "...on who is doing the defining and who has the power to make the definitions stick".[39]

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34 Frost, D. M. (2011). Social stigma and its consequences for the socially stigmatized. Social and Personality Psychology Compass, 5(11), 824-839.

35 Goffman, E. (1991) Stigma: Notes on the Management of Spoiled Identity

36 Hogg, M. & Vaughan, G. (2011). Social Psychology. p. 376

37 Goffman, E. (1991) Stigma: Notes on the Management of Spoiled Identity p. 14

38 World Health Organization (2011). World Report on Disability. Geneva: W.H.O.

39 Hughes M. & Kroehler, C. (2011). Sociology, the Core. N.Y.: McGraw Hill. p. 136

Stigma can be seen as a social construction that serves the people and social groups that are at an advantage. It is also true that people with this privilege will want to preserve their benefits and also to protect the current situation.

At the end we can define stigma as a particular kind of relationship in-between attribute/ stereotype/ prejudice. In this way, there is an interconnection between the notions mentioned above.

2 Disability and access to health services

Disabled people encounter numerous physical and programmatic barriers to receiving health care of same quality and effectiveness as the rest of the population. Access to healthcare is considered a human right and is identified in many human rights instruments, including the Convention on the Rights of Persons with Disabilities (CDPD) which states in Article 25 that "People with Disabilities have the right to the enjoyment of the highest attainable standard of health without discrimination on the basis of disabilities".[40] Access to health implies that disabled persons should be able to access all health services, taking into account their specific needs. This requires effective access to prevention and care, allowing the person to be fully recognized as a medical care user, be welcomed and listened to in the places of prevention as well as the removal of any obstacles in access to healthcare services. To achieve this, it is necessary to rely on the values of a public health policy guided by respect of the fundamental human rights, such as dignity, equality and solidarity.

Despite the great progress in the health care of disabled people, significant disparities still exist, related to the use and diversified consumption of health services.[41] During the last decades the analysis of the determinants of medical care utilization from disabled people is receiving increasing attention. This seems to result from a number of societal values including a growing consensus that people have the right to medical care regardless their ability to pay for this service; the general belief that certain population groups are not receiving care comparable in terms of quality and quantity to what is available to the rest of the population; public consternation over 'the crisis in medical care' stimulated by rising prices and growing dissatisfaction.

Research evidence confirms that substantial inequalities of access to healthcare services exist for disabled people. Barriers to access are identified on both the demand and supply side and seem particularly evident in areas such as preventive care and health promotion. Regarding the supply of health services, barriers include the existence of long waiting times at hospitals, the geographical location of services, the financial costs of health care and the lack of adequate information on the available care. From the standpoint of the demand, main barriers include inequalities regarding income, age, gender, skills, beliefs, preferences and opportunities.[42] At this point it should be noted that barriers to access and use of health services does not always relate to the supply or demand shaft, but often the two axes interplay creating severe health inequalities.

40 UN, Convention on the Rights of Persons with Disabilities and Optional Protocol. New York: United Nations, 2006

41 Souliotis K., Politics and Economy of Health- Strategic Planning-Management and Administration, Economic Function- Sectoral Policies, Athens, Papazisis, 2006,p.46

42 European Commission, Directorate-General for Employment, Social Affairs and Equal Opportunities, «Quality In And Equality Of Access to Healthcare Services», (2008), European Communities.

Research indicates that structural barriers related to insurance and health plans for general population tend to be exacerbated for people with disabilities.[43] Peters et al. describe four main dimensions, each having a supply-and-demand element, and include the following: "1. Geographical accessibility…, 2. Availability, having the right type of care to those who need it…, 3. Financial accessibility… 4. Acceptability, the match between how responsive health service providers are to the social and cultural expectations of individual users".[44]

The literature also documents a number of additional barriers. Drainoni et al. find that people with disabilities experience multiple barriers to obtaining healthcare, including lack of adaptive equipment and inaccessible environments, professionals' inability to spend time with patients with speech and hearing difficulties and professionals having limited information on where to refer patients for specialized healthcare.[45] Furthermore, significant disparities were found for five chronic health conditions, in particular high blood pressure, cardiovascular disease, arthritis, diabetes and chronic pain. Finally, adults with disabilities were twice as likely not to have visited the dentist in the past five years. The possibility that arthritis and chronic pain are underdiagnosed in people with limited communication skills should also be considered.

Research also shows that failure to communicate leads to problems with compliance and attendance. For example, the UK Guide Dogs for The Blind Association found that 95% of visually impaired people had never received health advice or prescriptions in accessible format. Similarly, the Royal National institute for Deaf People found that one in four people with a hearing impairment had missed a medical appointment due to lack of accessible information. This failure to communicate effectively potentially causes delays in diagnoses and treatment.[46] Other studies indicate that communication barriers ranked among the top three obstacles in receiving necessary health care[47] and can also result in diminished patient comprehension of medical information.[48] Smith found that people with a disability were 2.26

43 WHO, Disability and Health. Retrieved March 13, 2017, from http://www.who.int/mediacentre/factsheets/fs352/en/

44 Peters, D.H., Garg, A., Bloom, G., Walker, D.G., Brieger, W.R.,& Hafizur Rahman, M., Poverty and access to health care in developing countries. Annals of the New York Academy of Sciences, 1136 (1), 161-171

45 Drainoni, M.-L., Lee-Hood, E., Tobias, C., Bachman, S.S., Andrew, J., & Maisels, L., Cross-disability experiences of barriers to health-care access: Consumer perspectives., Journal of Disability Policy Studies, 17(2), 101-115.

46 Albrecht G.L., Devlieger P.J., The disability paradox: high quality of life agents all odds. Soc.Sci.Med 1999, 48: 977-88

47 Solis J.M., Marks G., Garcia M., et al. Acculturation, access to care and use of preventative services by Hispanics : findings from HHANES 1982-1984. Am J Public Health. 1990;80 (Suppl): 11-19.

48 David R.A., Rhee M. The impact of language as a communication barrier in an underserved urban Hispanic community. Mt.Sinai J Med. 1998; 65:393-397.

to 3.78 times more likely not to have access to health care.[49] Sheer et al. identified three categories of barriers: environmental, structural, and process.[50] Specifically related to communication, is the failure of health professionals to provide patients with alternative methods of communication.[51] Drainoni et al[52,] defining these barriers as structural, found that many individuals with speech or hearing disabilities encounter communication problems. Deaf individuals cite difficulty in obtaining Sign Language interpreters for medical visits and gaps in understanding. Process barriers also involve the delivery of service.[53] Drainoni et al.[54] identified personal and cultural barriers which include misconceptions, lack of respect, reluctance or unwillingness to care for persons with disabilities. Smith[55] found that people with disabilities are at risk of experiencing ineffective patient-physician communication, compromising current health status.

Social networks are also a factor in the capacity of disabled people to access health care. Badu found that people with disabilities not living with family members were more likely to have experienced physical and communication barriers to health care.[56] Furthermore, societal factors, such as class, are important to understand origins of health disparities.[57.] The role of income, work organization and household labour consist potential mediating factors. In terms of socioeconomic status, people with disabilities are less likely to be able to work, more likely

49 Smith D.L., Disparities in health care access for women with diasabilites in the US from the 2006 National Helath Interview Survey (NHIS). Dis Health. 2008; 1:79-88.

50 Scheer J, Kroll T, Neri MT, et al. Access barriers for persons with disabilities. J Disabil Pol Stud. 2003; 13: 221-230.

51 Iezzoni L.I, Davis R.B., Soukup J., et.al. Quality dimension that most concern people with physical and sensory disabilities. Arch Int Med. 2003; 163: 2085-2092.

52 Drainoni M-L, Lee-Hood E, Tobias C, et al. Cross-disability experiences of barriers to health-care access : consumer perspectives. J.Disahil Pol Stud. 2006; 17:101-115.

53 Hanson KW, Newman P, Dutwin D, et al. Uncovering the health challenges facing people with disabilities: the role of health insurance. Health Affairs-Web Exclusives. 2003

54 Drainoni M-L, Lee-Hood E, Tobias C, et al. Cross-disability experiences of barriers to health-care access: consumer perspectives. J Disahil Pal Stud. 2006; 17: 101-115.

55 Smith D.L., Disparities in patient-physician communication for persons with a disability from the 2006 Medical Expenditure Panel Survey (MEPS), Disability and Health Journal. 2009;2: 206-215.

56 Badu E., Access Barriers to Health Care among People with Disabilities in the Kumasi Metropolis of Ghana, Canadian Journal of Disability Studies, Vol 5, No2 (2016).

57 Muntaner C., Borell C., Vanroelen C., et.al., Employment relations, social class and health: A review and analysis of conceptual and measurement alternatives. Social Science & Medicine, 2010, 71, 2130-2140

to have low incomes and to be dependent on state-funded health insurance programs. Thus, they experience significant gaps in coverage that cause them to delay needed care.[58]

Unfortunately, the aforementioned have not led to efforts to include needs of disabled patients in medical curricula. One notable exception is the work carried out at the State University of New York, where medical students had the chance to participate in a course focusing on particular needs of disabled patients included in the general curriculum.[59] The curriculum's evaluation indicated that it led to significant improvement in several factors[60]. However, this effort did not take into account the detrimental effect that health care infrastructure may have in the level of health care provision and focused only on medical students and not on health care practitioners in general. An effort to review interventions concerning education of health care professionals on disability demonstrated that a range of approaches have been tried. Simple lectures appear to be less effective than contact with disabled people themselves.[61] Furthermore, inter-professional education appears particularly appropriate for learning about disability, given that disabled people often engage with a multiplicity of different professionals[62]. Finally, innovative curricula drawing on the humanities appear to have potential to illuminate and broaden the professional's understanding of disability[63].

SMiLe aims to take the next step in accessible health care provision, focusing equally on societal, structural and infrastructure barriers. Nowadays, the holistic approach of the patient is the primary issue of medicine care, as the impact of psychological and social factors have been recognized. Doctor's empathy has a beneficial effect which contributes to patient's empowerment and participation in decision-making and training in communication skills of medical personnel can be instrumental in improving patient's wellbeing. Thus, in the present project deliverable, useful material on interaction with disabled patients is provided to interested health professionals.

58 Dejong, G., Palsbo, S.E., Beatty, P.W., Jones, G.C., Kroll, T., & Neri, M.T., The organization and financing of health services for persons with disabilities. The Milbank Quarterly, 2002, 80(2), 261-301.

59 Symons AB, McGuigan D, Akl EA. A curriculum to teach medical students to care for people with disabilities: development and initial implementation. BMC Med Educ. 2009;9:78.

60 Symons, A.B., Morley, C.P., McGuigan, D., Akl, E.A. A curriculum on care for people with disabilities: Effects on medical student self-reported attitudes and comfort level (2014) Disability and Health Journal, 7 (1), pp. 88-95

61 Shakespeare T., Kleine I., (2013) Educating Health Professionals about Disability: A Review of Interventions, Health and Social Care Education, 2:2, 20-37

62 Anderson, E.S., Smith, R. and Thorpe, L.N. (2010) Learning from lives together: medical and social work students' experiences of learning from people with disabilities in the community. Health Soc Care Community 18 (3), 229–240.

63 Evans, M. (2002) Reflections on the humanities in medical education. Med Educ 36, 508–513.

3 Access of persons with visual impairment to the health system

3.1 Definition

The term visual impairment includes low (moderate) vision, severe and total loss of vision.

The reduced capacity of vision, to the extent that caused problems cannot be overcome by usual mediums, such as glasses, medication or surgery, is defined as visual disability. On the other hand, the complete vision loss is defined as blindness.

3.2 Consideration or Key points

- You must always keep in mind the safety of the patient.
- You must provide safe and documented clinical care.
- You must explain the exact procedure that you will follow in order for the patient to fully understand it and give you his/her consent.

3.3 Prerequisite knowledge

Prior to visually impaired patient's examination, make sure that you know the following:

- The four levels of visual function
- Visual acuity
- Visual fields
- Sighted guide techniques
- Concepts such as consent, liability, negligence

3.4 Theoretical Background

285 million people are estimated to be visually impaired worldwide: 39 million are blind and 246 have low vision. In particular 82% of people living with blindness are aged 50 and above.[64]

There are 4 levels of visual function, according to the International Classification of Diseases -10 (Update and Revision 2006):

- normal vision
- moderate visual impairment
- severe visual impairment
- blindness.

3.5 The causes

Globally the major causes of visual impairment are:

- Uncorrected refractive errors (myopia, hyperopia or astigmatism), 43 %
- Non-operated cataract, 33%
- Glaucoma, 2%.[65]

[64] World Health Organization (2008). Blindness and vision impairment. Available at http://www.who.int/news-room/fact-sheets/detail/blindness-and-visual-impairment

[65] WHO (2008) Blindness and vision impairment.

3.6 Demographics

Approximately 90% of visually impaired people live in developing countries. An estimated 19 million children are visually impaired. Of these, 12 million children are visually impaired due to refractive errors, a condition that could be easily diagnosed and corrected.

Generally speaking, 1.4 million are irreversibly blind for the rest of their lives and need visual rehabilitation interventions.[66]

3.7 The Greek case

According to Greek law (Law No. 958/1979) "blind" is considered any person which completely lacks the perception of light or whose visual acuity is below 1/20 normal. In Greece it is estimated that the number of legally blind persons amounts to approximately 27,000, without estimating the number of people with partial sight, as there is no legal definition for this. Official organizations, such as the Panhellenic Association of the Blind and the National Confederation of People with Disabilities estimate that the number may be much higher as there are no official statistics. During 2003 (last official record) the National Statistical Service of Greece reports that the percentage of people with vision loss amounts to 4.5% of all persons with disabilities[67].

3.8 Effect of visual impairment on the individual

If loss of vision is gradual, individuals may adapt better to changed circumstances. In case the loss of vision is sudden, (e.g. accident), adaptation may be more difficult.

The series of changes involve every aspect in the everyday life of the person who is experiencing vision loss and can lead to a loss of anonymity and privacy.

The person dealing with a sudden vision loss may face a new reality that involves:

a) difficulty in understanding body language (e.g., gestures)

b) loss of access to written information

c) difficulty in orientation which may affect the person's desire to exit his/her house without an escort.

In parallel, visual impairment may have adverse consequences for health and wellbeing, and its prevalence is increasing, especially among older people.

3.9 Framework

3.9.1 Access to the health system

People with visual impairment are likely to have limited access to information and healthcare facilities, and to receive sub-optimal treatment. These difficulties are added as a further

[66] WHO (2008) Blindness and vision impairment.

[67] Available at http://www.statistics.gr/el/statistics/-/publication/SJO12/2002

burden to the fact that health care professionals are not aware of the added requirements arising from disability.

Visual impairment is usually not obvious to the casual observer. This is particularly true in cases where persons with visual impairment do not use white cane, do not have a guide dog and do not use an electronic navigational aid.

Cases have been reported where visually impaired persons do not inform those involved in their healthcare about their impairment. This seems to be particularly true among older individuals who feel embarrassed that they can no longer see well. As a result, many times they may sign papers they don't know what they related to or do not know if they really agree with their content. That ignorance often creates anger and confusion. Furthermore, this may create to the casual observer the image of a demanding person while, in reality, this is clearly related to the societal effects of their impairment.

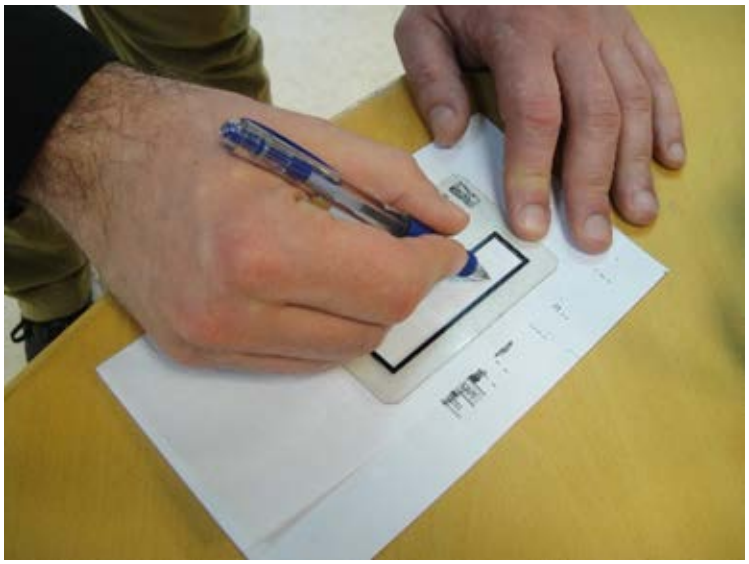


Figure 1 : Signature box[68]

3.9.2 How do we recognize a visually impaired person?

Health professionals should be informed to recognize the subtle signs that indicate that a patient may be visually impaired, even if that is not immediately obvious. These signs may include the following:

1. A person that may have difficulty in finding a chair or negotiating furniture,

2. A person that may drag his/her feet on the floor or walk very slowly without facing obvious kinetic difficulty

3. A person that may be blinking his/her eyes intensely during changes of light intensity. Furthermore, he/she may not make eye contact during a conversation or not respond if someone does not make its presence felt by touch.

4. A person that may wear dark glasses – orange or yellow – whilst indoors.

[68] http://shop.rnib.org.uk/

5. A person that may use a white cane or symbol cane.

6. A person that may use a guide dog. It should be noted that, in Greece, guide dogs can legally enter in private and public places (Greek Law. 3668/2010, no. 16, par. 7).

7. A person that may be accompanied constantly by an escort.

3.10 Process

3.10.1 Ways to improve health services

Bearing in mind that people with partial or total vision loss may encounter difficulties in processes and contacts with the health services, it is important for both the patient and the health care professional to achieve effective communication.

If a visually impaired person does not receive proper medical information on the health issues he/she faces, he/she will not be able to follow the treatment guidelines properly.

The difficulty of accessing visual information can make the involvement of a third person, besides the health professional and the patient, to read their content necessary. As a result, privacy and independence are lost.

At the same time, the visually impaired person is depending his/her personal health on information that may not have been properly transferred. It is therefore important to understand that, when health professionals talk to people with visual impairment, they must share information effectively with them, their family or their companion (if the person wishes to share medical issues – a delicate issue due to medical confidentiality).

3.10.2 Communication skills

If the patient has partial sight that allows him/her to read anything concerning medical treatment or instructions for subsequent visits, the health professional should write the text in big, capital letters, on a contrasting background. White paper without lines and the use of a black, mat pen is preferable in order to create sufficient colour contrast). At least 1.5 cm spacing should be used.

Figure 2 : Written instructions

The instructions can also be sent by email if the health professional knows that the visually impaired patient can magnify them or has electronic devices or PCs with voice synthesis.

The person with partial or total sight loss should be allowed to record any information in any electronic medium he/she wishes or use a Braille notebook.

Figure 3 : Braille notebook[69]

3.10.3 Hospitalization

If the person with partial or total vision loss has no support and needs to be hospitalized, he/she should be accompanied by a volunteer who will assume the role of an escort, if desired.

3.10.4 Use of technical aids and new technologies

In case the health professional needs to give health treatment, it should be made sure that the visually impaired patient can distinguish his/her pills, measure the treatment doses or put in eye drops. For all the above cases, there are appropriate aids in order to help the patient to follow his/her treatment depicted in the following figures. When aids are not used, the patient should be assisted by a sighted person.

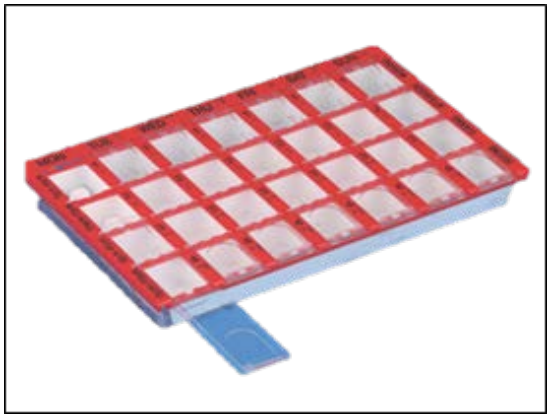


Figure 4 : Pill organizer[70]

[69] http://shop.rnib.org.uk/

[70] https://shop.rnib.org.uk/

Figure 5 : Dosing device[71]

Figure 6 : Eye drop device[72]

For those who don't know to read the Braille writing that is printed on drugs, there are electronic devices to mark the drugs with audible tags (pen friend). There are also audible electronic aids such as talking thermometers, talking blood pressure monitors, talking scales, talking glucose monitors. These are depicted in the following figures.

Figure 7 : Pen friend[73]

[71] https://shop.rnib.org.uk/

[72] https://shop.rnib.org.uk/

[73] https://shop.rnib.org.uk/

Figure 8 : Audible thermometer[74]

Figure 9 : Audible blood pressure monitor[75]

Figure 10 : Audible scale[76]

Figure 11 : Audible glucose monitor[77]

[74] https://shop.rnib.org.uk/

[75] https://shop.rnib.org.uk/

[76] https://shop.rnib.org.uk/

[77] https://shop.rnib.org.uk/

3.10.5 Step by step guide on communication

Step	Reasoning
1. (a) Make your presence known by saying your full name and your role. (b) Talk face to face. (c) Speak with natural tone of voice and voice intensity. Do not forget that you are addressing a person with a loss of vision rather than hearing.	Direct verbal communication will bring the desired sense of security to your patient, while face to face communication with a natural tone of voice will help him/her orient in the space and, hence, feel more relaxed. **Figure 12 : Face to face communication**
2. Do not expect eye contact or reassurance with a look.	Many people with loss of vision cannot focus at all on a person's face or have not learned to follow the voice. This does not mean that the patient is not following you or listening to what you say.
3. Speak directly to him/her and do not talk through third parties (e.g. an escort).	Although the patient may be accompanied and, as long as he/she is an adult, the escort is not entitled to make decisions, is not a guardian, nor does he/she perform any duties of guardian. The companion's role is limited to the safe movement of the person with loss of vision in space.
4. If there are other people present in the discussion, present them.	It serves to know the number of people but also their names.
5. Inform the patient when you leave or when the conversation stops.	Otherwise, the visually impaired person may continue to speak without perceiving, for a short time, the absence of someone. This causes embarrassment and confusion.
6. Try to avoid areas with a lot of noise.	Noise adds obstacles to effective communication.

7. Ask your patient about his/her vision level and if help is needed.	This will help the way you will choose to move in space, the communication and finally the degree of trust you will develop with your patient.
8. Do not avoid using words such as "look," "see," or report activities like "did you see the news?"	He/she will not feel bad at all. Conversely, if you talk sophisticated or try to avoid words you will make your patient feel uncomfortable.
9. During the visit, if an examination is about to take place, lead the patient to the examination table and then explain the physical contact that will occur to the patient's body. **Figure 13 : Examination of patient**	Explaining each stage of the examination and the objects you use will lead to optimal collaboration, as your patients will feel comfortable, secure, and will not perform abrupt movements that may be dangerous to the process (e.g., use of an otoscope). **Figure 14 : Examination of patient**
10. If there are other people present during the visit (e.g. medical students, nursing staff), inform the patient and ask if they feel comfortable with their presence. Ask other persons to present themselves, report their role and ask for the patient's consent to remain in the room.	Your patient will feel awkward if they hear other voices and the relationship of trust with you will be disturbed.
11. Be clear and specific when giving instructions. For example: "The door is	The clear verbal description referring to orientation guidelines makes the visually

on your left". Avoid using gestures to show direction.	impaired person independent in an unfamiliar environment.
12. Explain to the patient the location of objects. For example: "The glass with water is right in front of you" or use the clock method, e.g. "Your water is at 3 o'clock". **Figure 15 : Explanation of objects' location**	The description of objects in front of a table relieves the person with loss of vision from anxiety that can accidentally cause a small accident.
13. Keep in mind that light changes affect vision.	Bright light can cause more trouble. Ask your patient what is more convenient for him.

3.10.6 Sighted guide techniques

During guidance there is no reason to explain guiding techniques. You can of course give extra verbal information about the surroundings, but if you want to show something, always use the guiding hand. You should always keep in mind that you do not leave your companion at an unstable location, for example in front of a door, elevator, etc.

Step	Reasoning
1. Make your presence known by touching the hand of the visually impaired person which does not carry a white cane with the outside of your palm.	The inner part of the palm conveys heat and intimacy. It is preferable to maintain a distance from a random escort.

Figure 16 : Making your presence known

2. Basic companion hold: advance half or one step and the escorted person holds you over the elbow.	In this way the visually impaired person better perceives the straight course and the directional changes as his/her hand rests on the side of the companion.

Figure 17 : Basic hold

3. As you progress, if you encounter obstacles, bring your hand diagonally at your back to guide comfortably.	This way the visually impaired person comes right behind you. This helps the escort to ensure that both himself/herself and the escorted person are safe and comfortable in narrow passages.

Figure 18 : Progressing through narrow passages

4. If you want to change hand, change side keeping your back as a guide.	This way the escorted person does not lose contact with the escort. (see the following pictures clockwise).

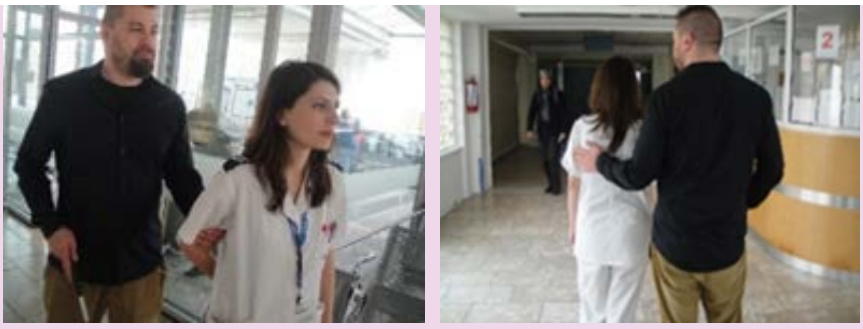


Figure 19 : Changing hand

5. If you want to change direction (180°), it is suggested that you make an internal turn. The companion and the person with a visual disability get face-to-face and the escort forwards his/her free hand.	This way you do not occupy more space and remain safe. (see the following pictures clockwise).

Figure 20 : Direction change

6. If you want to lead the person to sit on a chair, touch the chair with the hand that you use to escort him/her.	In this case, the person with a visual disability, following your hand, contacts directly the chair, while with the other hand he/she controls the exact place to sit.

Figure 21 : Leading a person to a chair

7. When you are in front of a closed door: (a) it is preferable for the vision impaired person to be on the side of the hinges. b) The escort opens the door with the hand that contacts the visually impaired person. c) The escort passes first from the opening and the visually impaired follows by closing the door with his free hand.	This allows the visually impaired person to realize the height of the door handle and the direction towards which the door opens. Also, the passing the door is faster, and there continuous contact between escort and escorted person is achieved. (see the following pictures clockwise)

Figure 22 : Passing through a door

8. When you are on a stair: a) Follow the basic companion hold. b) Keep a step forward. c) Ask the visually impaired person if he/she wants to keep the handrail and the companion at the same time.	When the companion is ahead he/she keeps the escorted person safe.

Figure 23 : Escorting on a staircase

3.11 After the process

- Ensure that the patient feels comfortable.
- Ask the patient if he wants to ask any questions or has any concerns.
- Make sure the patient has understood the treatment guidelines you have provided.
- Ensure you hand hygiene after contact with the patient.
- Make sure the patient leaves your place safely.

3.12 Evaluation

Consider the following questions:

1. How did the person feel? Did his body language show some discomfort or embarrassment that was not verbally expressed?

2. Have you been able to follow the escorting techniques?

3. Have the appropriate conditions for effective communication been achieved?

4. Have you encountered a problem during the examination?

5. Did you answer the patient's questions?

3.13 Reminder

Do not forget to:

- Keep the patient calm
- Thank the patient
- If there is no escort accompanying the patient, make sure that a member of the staff assist him/her on the way out.

3.14 Patient scenarios

1) "A patient with pain in the right ear comes to your office. Welcome him/her. Take him/her to the exam bed and examine his/her throat with the special stick and his/her right ear using an otoscope".
2) "There is a patient in your office reporting an increased blood pressure measurement. After measuring the pressure, he/she began to feel that the air did not get him/her. Welcome him/her. Take him/her to the test bed, measure oxygen saturation in the blood with a pulse oximeter (SatO2), and measure the pressure with (electronic) pressure gauge. After the measurements, tell the patient about the test's results".
3) "The patient comes to your office to tell her/him about the result of a recent blood test that she/he did because of weakness and dizziness. The patient has partial vision loss. Inform about the anemia problem that you found in the general blood test. Prescribe iron pills (tabl. tardyferon 1x2), and give diet instructions".

4 Access of persons with mobility impairment to the health system

4.1 Definition

The common feature in mobility impairments is the fact that some aspect/s of an individual's physical function are affected. Mobility impairments vary in severity, from reduction of strength up to paralysis.

There are many different types of mobility impairments and a wide variety of situations faced by people. Disability may be permanent or temporary.

A mobility impairment can be congenital or acquired by illness or injury. People with the same mobility impairment may have different skills from each other.

4.2 Consideration or key points

It is of utmost importance to ensure the patient's safety

- It is vital to fully explain to the patient the process you are going to follow in terms of transfer and his/her body. Stop if he/she wants to give you some clarification/ information/advice.
- You must have fully explained the procedure and the medical protocol you will follow and have the patient's consent.
- Remember that your own safety can also ensure the patient's safety

4.3 Prerequisite knowledge

Before proceeding with the patient's examination, make sure you are familiar with the following:

- Types of motor impairments
- Various causes of motor impairment
- Accessibility / Supportive Technologies
- Autonomy/ Independence
- Concepts such as: rights, definition of disability, support, respect

4.4 Theoretical background

There are indications that people with mobility impairments are less likely to have access to and / or use some primary health care services compared to the general population. Access is defined as the use of services in relation to the real need for care, while lack of access occurs when there is a need for health services, but these are not available.[78] Access barriers are those factors that prevent a person from using a service when required. Denial of access to necessary preventive services may increase inequalities in health and prosperity and lead to social exclusion.

[78] Aday L.A. (1975) Development of Indicators of Access to Medical Care. Health Administration Press, Ann Arbor, Michigan

Supporters of the social model of disability define "disability" as a loss or limitation of opportunities for full social participation or as a "consequence of the failure of social organization", to take into account the different needs of the disabled and to eliminate the obstacles they face.[79]

According to an American study[80], adults with severe mobility restrictions are less likely to be tested for blood pressure or cholesterol levels, as well as being questioned about health behaviors such as alcohol and tobacco use. Moreover, women with severe mobility restrictions were less likely to be tested for Pap smears, breast exams and mammograms.

4.5 The causes

Various causes of mobility impairment:

- Spinal cord injury: A damage to the spinal cord which, depending on its degree and level, affects differently the physical function of a person. It may include loss of sensation or mobility control of the lower limbs, torso and upper limbs, as well as loss of autonomous body processes. Spinal cord is part of the central nervous system. It runs through the spine, starting from the base of the brain and extending to the waist, estimated to be about 45-51 cm long. It forms part of the central nervous system and provides aesthetic, kinetic and autonomic neurosis to the body.

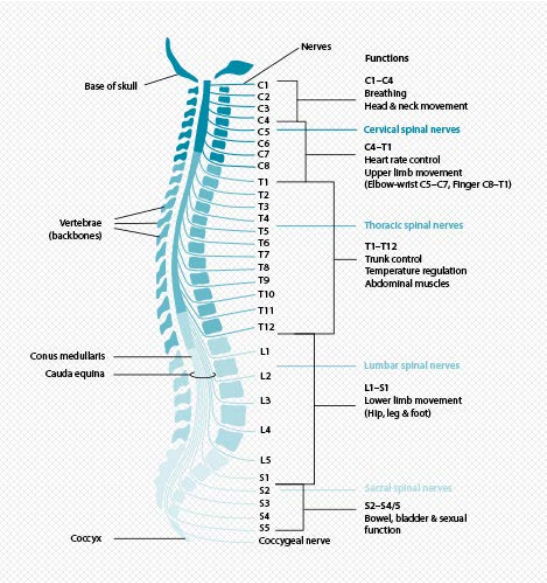


Figure 24 : Organization of the spinal cord[81]

[79] Oliver M. (1996) Defining impairment and disability. In: C. Barnes & G. Mercer (Eds) Exploring the Divide: Illness and Disability. Disability Press, Leeds

[80] Kroll T. Jones G., Kehn M., Neri M. (2006) Barriers and strategies affecting the utilisation of primary preventive services for people with physical disabilities: a qualitative inquiry. Health and Social Care in the Community 14(4), 284–293

[81] Bickenbach, Jerome E., et al. International perspectives on spinal cord injury. Geneva, Switzerland: World Health Organization, 2013

- Amputation is the loss of one or more limbs, sometimes caused by trauma, cancer, diabetes or other conditions.
- Cerebral palsy refers to a group of neurological disorders that appear in infancy or early childhood and permanently affect body movement and muscle coordination. It causes mobility impairments to upper or lower body, a lack of muscle coordination, spasms and speech difficulty. Symptoms usually appear during the child's development and in rare cases from the first few months, while they do not have the same importance at each developmental stage. The three main types of celebral palsy include:
    - Spastic CP affecting the limbs that may exhibit increased muscle tone, tremor, muscular hypertonicity, weakness
    - Athetoid CP is characterized by involuntary movements of the person
    - Ataxic CP affects mainly balance and coordination. When a person showcasing symptoms from more than one type, then it is consider to be a mixed type
- Neuromuscular disorders include a variety of conditions, such as muscular dystrophy, multiple sclerosis, and ataxia, which result in degeneration and atrophy of muscle or nerve tissue.
- Arthritis is the inflammation of the body's joints, causing pain, swelling and difficulty with mobility.

The consequences after the acquisition of a mobility impairment may vary and affect various aspects of a person's life. In addition to physical ones that directly affect a person's health and functioning, the impact on areas such as employment, education and social participation is also important.[82] It should be noted that barriers to employment and education include a wide range of systemic problems such as accessibility, motivation and transport. Meeting the above-mentioned needs, physical, environmental and of societal, can lead to the successful integration of people with disabilities into the community. Full integration into society is also the ultimate goal of rehabilitation and a vital outcome recognized by the World Health Organization.[83]

Mobility devices enable persons with disabilities to achieve personal mobility, and access to these devices is a precondition for achieving equal opportunities, enjoying human rights and living in dignity[84].

[82] Anderson, D., Dumont, S., Azzaria, L., Bourdais, M.L., and Noreau, L. (2007). Determinants of return to work among spinal cord injury patients: A literature review. J. Vocat. Rehabil. 27, 57–68

[83] World Health Organization (2001) "International Classification of Functioning, Disability and Health (ICF)" Geneva: WHO.

[84] UN (1993). Standard Rules on the Equalization of Opportunities for Persons with Disabilities. New York, United Nations (http://www.un.org/esa/socdev/enable/dissre00.htm, accessed 12 October 2011)

Assistive technology can be defined as "any piece of equipment, or product, whether it is acquired commercially, modified or customized, that is used to increase, maintain, or improve the functional capabilities of individuals with disabilities".[85] Mobility devices are designed to facilitate or enhance a user's personal mobility – this relates to their ability to change and maintain body position and walk and move from one place to another[86]. Examples include crutches, walking frames, wheeled walkers, wheelchairs (manual and powered), tricycles, scooters, orthoses such as callipers, braces and splints, and prostheses such as prosthetic legs.

4.6 Anatomical elements

The effects of mobility impairment can be:

1. Monoplegia = partial or complete damage at one part of the body e.g. one weak foot

2. Hemiplegia = partial or full damage on one side of the body. B.C. left hemiplegia means a partially weak left hand and foot.

3. Paraplegia = reduced sensation and/or mobility (partial or complete) at the two lower limbs

4. Quadriplegia = decreased sensation and / or mobility in the upper limbs, trunk, legs and pelvic organs, i.e. including all four limbs.

5. Amputation = removal of a limb. It can be a result of trauma or illness

Regarding amputation, lower limb amputations may include

- amputation of the lower limb distal to the ankle joint.
- amputation of the lower limb at the ankle joint.
- amputation of the lower limb between the knee joint and the ankle joint, commonly referred to as a below-knee amputation.
- amputation of the lower limb at the knee joint.
- amputation of the lower limb between the hip joint and the knee joint, commonly referred to an above-knee amputation.
- amputation of the lower limb at the hip joint.
- amputation of the whole lower limb together with all or part of the pelvis. This is also known as a hemipelvectomy or hindquarter amputation.

[85] World Health Organization (2011) "Joint position paper on the provision of mobility devices in less-resourced settings: a step towards implementation of the Convention on the Rights of Persons with Disabilities (CRPD) related to personal mobility."

[86] World Health Organization (2001) "International Classification of Functioning, Disability and Health (ICF)" Geneva: WHO.

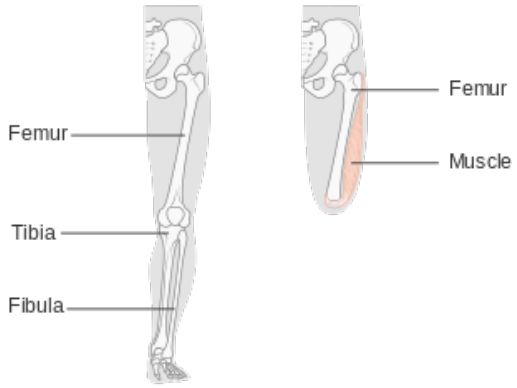


Figure 25 : Anatomy of lower limb[87]

Upper limb amputations may include

- partial hand amputation
- wrist disarticulation
- below-elbow or forearm amputation
- elbow disarticulation
- above-elbow amputation
- shoulder disarticulation
- forequarter amputation

4.7 Keep in mind

- Speak in the same way with a normal voice tone (without screaming or speaking slower) as you would talk to anyone else.
- Talk to the person as an adult and speak directly.
- Ask if he/she needs help. Do not assume a priori that help is needed
- When communicating with a person with a mobility impairment, sitting on a wheelchair, also sit so that you are at the same eye level and maintain proper eye contact.
- Keep in mind that personal space of a person with a mobility impairment includes his/her wheelchair, scooter, crutches, walking stick, walker or other mobility aid. Do not lean on the aids.
- Make a handshake. People who have limited hand function or have a prosthetic arm also make handshakes.
- Do not push or move the mobility device (e.g. a wheelchair) or pull a person without asking first. There is a serious risk of injury.
- People adapt to disability in thousands of ways. You should not link personality characteristics with their disability.
- Wheelchair is an extension of a person's body and should not be characterized as something that makes him "limited".

[87] https://www.wikidata.org/wiki/Q27437064

- Address the person with a mobility disability directly and not the personal assistant or escort.
- Do not insist on providing assistance if the individual wishes to be assisted by his or her own companion who knows his or her body and the kind of help it needs best.
- Do not assume that a person with a mobility impairment is dependent on someone else, he/she may live autonomously and also not consider his/her disability a problem.
- When you see a person with mobility impairment in health services, do not feel a priori that he/ she is a patient, as he/she may be simply accompanying a person.

4.8 Process

4.8.1 Prepare yourself

People with mobility impairments have a similar life to those without disabilities. Dependency is not necessarily linked with mobility impairments and disability. In addition, a motor disability is not associated with mental health issues or other health problems. Talk to the person and look for the reason of their visit. It is important to not follow your prejudices and your own conclusions about his/her state. It has been observed that medical staff tend to see people with disability only through the lens of "personal tragedy". Still, it is important to remember that treating a patient with a mobility impairment may require more time to cater for the full range of his/her needs. For example, a woman wheelchair user may need more time to do a mammogram, or an amputee may need more time to get dressed and undressed, take out a prosthetic limb, to transfer on the examination table and get be ready for examination. Show patience, otherwise your patient may not take a thorough examination simply because of a lack of time.

4.8.2 Prepare the patient

People with disabilities themselves may know better what is happening in their own bodies most of the time. Studies have shown that many feel that they should train their doctors on health issues. For example, a person with a spinal cord injury that evolves may face issues such as: bone mass loss, skin care, diabetes, weight increase, a set of conditions related to paraplegia. General practitioners are not necessarily aware of these and should be informed by the patient. There should be a balance between empowering and respecting the knowledge that a disabled person has for his or her body and assigning him/her with the responsibility that they themselves are the experts for their conditions.

In this context, it is important to say that, before the doctor takes any action, he should inform the patient in detail to cause unpredictable consequences.

4.8.3 Prepare the equipment

Structural barriers to health care include inaccessible facilities and office equipment. These include both the internal and external features of the building where the services are provided, including the lack of accessibility seats, lack of ramps, narrow doors, small waiting and examination rooms, and inaccessible WCs.

For example, an inaccessible office, which may be located on a floor without an accessible elevator, may prevent a mobility impaired patient from visiting it. It is also important to have the necessary space in the examination office so that the patient can maneuver with ease with whatever assistive device he/she uses.

- Accessibility of equipment

Accessible equipment is very important. Lack of adjustable examination tables, scales for wheelchair users, patient lifting cranes, and inaccessible diagnostic equipment such as mammograms may lead to insufficient examination of mobility impaired patients. There are many people with mobility impairments who have not been weighed and measured their height by medical personnel due to lack of proper equipment.

4.9 Step by step guide on health provision to mobility impaired patients

Step	Reasoning
1. At the information desk, and when you give directions in general, think first the accessibility of the proposed route	Check the distance, the weather conditions, the barriers (especially if the patient needs to get out of the building), stairs, steps, doors' width **Figure 26 : Check accessibility**[88]
2. Talk directly to the disabled person	Don't talk to the assistant. People with mobility impairment do not need to be represented by someone else. **Figure 27 : Talk directly**[89]

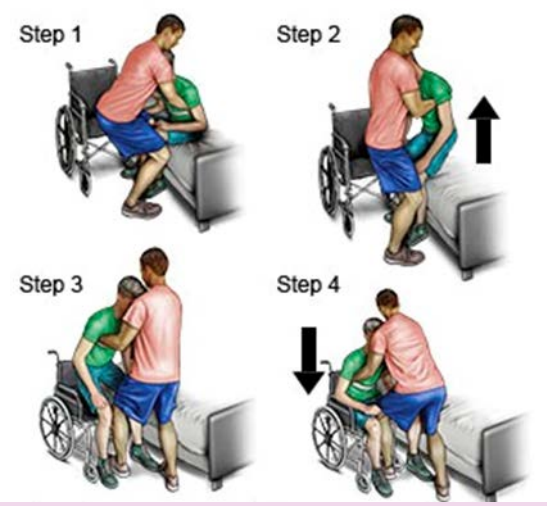
[88] http://www.wikihow.com/Help-Those-Who-Have-a-Disability

[89] https://kdsmartchair.com/pages/wheelchair-etiquette

3. Make a handshake	People who have limited hand function or have a prosthetic hand also make handshakes! **Figure 28 : Make a handshake[90]**
4. Ask if the mobility impaired person needs help.	Many people with mobility impairments are completely autonomous and do not need assistance. In addition, do not be afraid to ask questions about what kind of help is needed and how to provide it.
5. Do not insist on providing assistance	Ask how you can better help regardless of the mobility assisting device they use. In case the patient arrives with a personal assistant or relative, let him/her be assisted by the escort if preferred. **Figure 29 : Do not insist on providing assistance[91]**
6. Ask if the room temperature is the right one for the patient	There are people with mobility impairments who face issues with body temperature due to damage to the spinal cord. Make sure the room temperature is right for them.
7. Equal treatment	Do not rush to estimate that the main issue of concern is related to the patient's impairment. Give time to the person to explain their needs and to finish the necessary actions (transfers, etc.) for the exam.

[90] https://kdsmartchair.com/pages/wheelchair-etiquette

91 https://twitter.com/scrapchallenge1 /status/1024599716867264514

8. If you need to assist a wheelchair user at stairs	Climb up or down more than one step. At the same time tilt the wheelchair while ascending or descending.
9. If you need to assist a wheelchair user on a steep slope	Grasp the handles of the wheelchair tightly to prevent it from falling forwards
10. Move any assistive device the patient is using ONLY with permission	Return the assistive device immediately after the end of the examination.
11. Appropriate knowledge of transfer is important both for your own safety and for the safety of the person with mobility impairment	Put weight and strength on your legs instead of your back • Remember that pushing is easier than pulling • Ask for help whenever necessary. It is always better to ask someone else for help than to risk an injury of yourself or your patient. • Make sure your patient understands what you are doing and propose a way that he/she can help you. • Keep the patient close to your body for support and stability.  **Figure 30 : Steps of transfer**[92]

[92] http://clipartimage.com/images/clipart-97030.html

12. Tune in with the patient before and during transfer	For safer transfer, those involved in it should be fully coordinated. Before you make any move ask who will do for example the countdown or who will say 'go'. In addition, make sure that both the wheelchair user and the place he/she will be moved to are steady and the wheelchair brakes are in place.
13. Stay next to the person after transfer	Many times the person may need some time to find his/her balance or to stabilize himself/herself.
14. Some people may walk or may be weak or unstable at their feet	Watch carefully to make sure the person does not fall. Stand on his/her weak side or, if he/she is able to walk on his/her own, you can stand slightly behind him/her. Be ready to move quickly if the patient stumbles or becomes unstable. When this happens, help the patient sit somewhere until they can continue. **Figure 31 : Assisting a crutch user**
15. If a person with amputation needs to remove the prosthetic limb	Give time and respect person's privacy for that moment. Close the curtain or turn your back for a while.

4.10 After the process

After completion of the examination, follow the transfer and support steps in the reverse order. Ask if the patient feels comfortable or if there is something that bothers him / her. Give the patient some time to calm down and tidy up. Ask if your treatment instructions have been understood and if there is need for support on the way out.

4.11 Evaluation

- Did you give all the instructions necessary to the patient?
- Did you inform him/her about the moves you intended to do during his / her support?

- Do you think you have been in the right position to protect yourself from an injury?
- Have you done any actions that could injure the patient?
- Do you think he/she was satisfied with the examination?
- Could you avoid some behavior / move that you did?
- Did you do something that the patient showed you or said that it bothered him/her or that it was not suited to his/her situation?
- What was the most difficult thing for you during the interaction and examination of the patient?
- Were you able to offer the help the patient needed?

4.12 Reminder

Do not forget:

- Always ask the patient what kind of help they need
- You do not remove assistive devices without their own consent
- You do not grab the wheelchair or any device on your own
- Your safety is important in order to be able to help the patient.
- Always refer directly to the patient.
- A person with mobility impairment can visit the doctor for various reasons and not exclusively related to his/her impairment

4.13 Further learning opportunities

It is useful for health professionals to have the opportunity to understand the meaning of support for people with motor impairment. This can be done by engaging and interacting with bodies and associations of people with motor impairment. In addition, there are big organizations abroad whose websites give much information e.g.

https://www.spinal.co.uk/

http://amputationfoundation.org

https://asia-spinalinjury.org/

https://www.mda.org

https://www.mssociety.org.uk/

https://www.eps-ath.gr/

https://www.amputee-coalition.org/

4.14 Patient scenarios

Think about what you would do in the following situations.

1. I think it is better to exam the patient in his wheelchair so as not to distract him. Is it ok to do so?

2. I was informed that an appointment is scheduled with a patient with mobility impairment. Can I ask the patient to bring someone along, who can help with the examination?

3. During the visit, it becomes clear that the patient should be examined immediately, but the equipment and the space are not accessible, what should I do?

5 Access of persons with hearing impairment to the health system

5.1 Definition

Hard of hearing or deafness may be caused by lesions or dysfunctions in different parts of the ear. If the lesion is located on the outside and middle ear against the bolt or the auditory nerve, the audio information lacks in quality and quantity. In essence, these sounds are perceived altered, at a lower intensity, with greater difficulty and from less distance than someone who listens normally.

This type of hearing loss is called conductive hearing loss, and usually the cause is some dysplasia of the ear, adhesion of a foreign body that has entered the ear or even secretions, some inflammation or injury to the bones of the middle ear.

In the above cases, the disorder concerns the sound transfer system. Supporting hearing with some hearing aid may lead to reverse of the disorder. In general, conductive hearing impairment, although considered to be mild or moderate, brings significant changes in the life of the person with it.

When the damage is detected in the inner ear (cochlear nerve), with deviations in the quality and amount of audio information, we refer to neurosensory hearing loss. In this case, the disorder lies in the sound perception system, not just in its transfer, the hearing loss rate is greater and is considered irreversible. Mixed-type hearing loss is a combination of the two previous ones and several times results from chronic conductive hearing loss.

Along with the type of hearing impairment, it is important to know its degree, the intensity of the sounds that are perceived by the hearing impaired or the deaf. International degrees of hearing loss have been defined as follows:

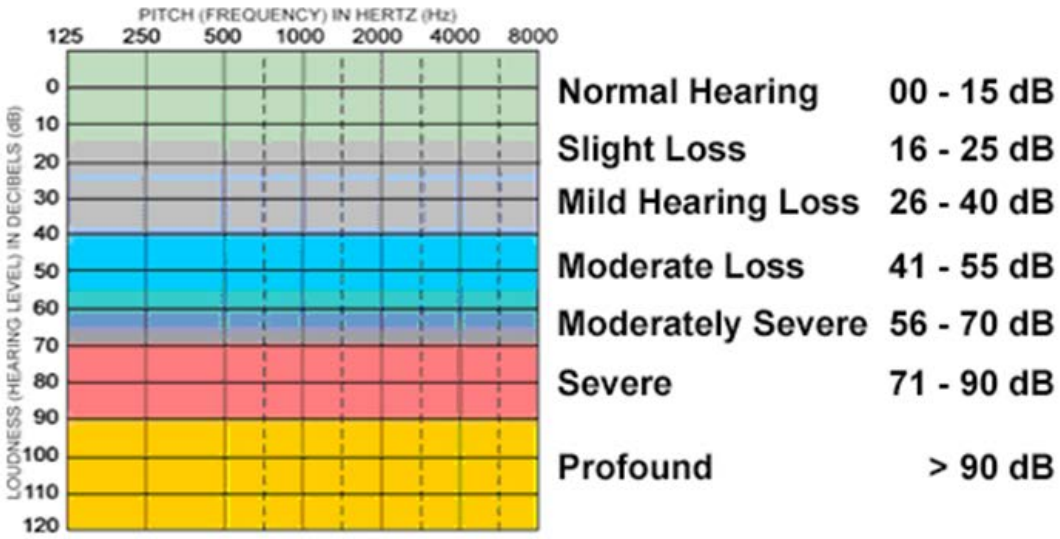


Figure 32 : Severity of hearing loss[93]

[93] https://auralrehabandeducators.wordpress.com/hearing-loss/

Different types of hearing impairment are distinguished:

1. Conductive Hearing loss: The damage is located in the outer or middle ear and makes the sound not to be driven as it should. Conductive hearing loss is usually mild or moderate in severity, between 25dB and 50dB, and in some cases may be temporary.
2. Neurosensory Hearing loss: The lesion is located in the auditory nerve. It occurs due to the absence or destruction of sensory cells (capillary cells) in the ear cochlea. It may be mild, moderate, severe or severe and is usually permanent.
3. Mixed type hysteria: This type of hearing aid combines neurosensory hearing loss and conduction hearing loss. It is due to problems in the inner, outer or middle ear.

5.2 The causes

The most important reasons that may cause hearing loss are the following: ·

- Noise (In the workplace-entertainment environment, one in eight young people in the urban centers of the western world from loud music)
- Chronic ear infections,
- Diseases (red, measles, meningitis, mumps),
- Medicines (streptomycin and gentamycin),
- Cancer tumors
- Ear injuries
- Old age

5.3 Demographics

Tens of thousands of people - many of whom are young - lose their hearing ability all over the world every year. This loss has a direct negative impact on their quality of life. For this reason, the World Health Organization (WHO), on the occasion of the International Day on Ear and Hearing (March 3rd), calls for public awareness as hearing loss is one of the widespread sensory disabilities. Today, according to WHO data[94], over 275 million people all over the world face serious hearing problems or are deaf, with a large percentage of them being young.

In Europe it is estimated that 73 million people have a hearing loss greater than 25 DB, while in the European Union 55 million citizens are estimated to face hearing problems. In Greece, the hearing impaired are calculated at 900.000, with 65000 of them being less than 18 years old. Worldwide, it is estimated that over the next few years, over 700 million people will face reduced hearing ability.[95]

[94] http://www.who.int/news-room/fact-sheets/detail/deafness-and-hearing-loss

[95] http://www.who.int/news-room/fact-sheets/detail/deafness-and-hearing-loss

5.4 Framework

5.4.1 Access to the health system

Deaf people find it difficult to use health services, either public hospitals or private clinics. Particularly, referring to public hospitals, deaf people face bureaucracy, but the biggest problem remains communication, not only for the diagnosis of a disease but also its treatment. The issue becomes more complex when oral instructions are given to the patient.[96]

The communication of the medical - nursing staff and patients with hearing impairment is usually not completed, leaving neither side satisfied. It is extremely important to look for possible alternative communication ways. For example, one of the most common dysfunctional practices is when the medical staff speaks behind the back of the patient, have their mouths covered or face towards in another direction, which prevents eye contact and hence lip reading.

Specifically, dentists wearing protective masks create a huge barrier to the lip-reading process. Most patients feel vulnerable during medical exams, in addition deaf people feel that information is not accessible at all. It should also be noted that, for the sake of convenience and speed, doctors often find it easier to talk to a hearing family member rather than to the deaf patient, thus transferring responsibility for the deaf patient to their family member, as if the patient is a minor. That practice may lead to the deterioration of the patient's health, weakening the relationship between doctor and patient and increasing the risk of medical mistake.

The medical staff should therefore initially respect the communication suggestions of each patient according to their needs, whether this is written communication, use of a sign language interpreter, lip-reading in a quiet and well-lit area or a combination of the above, without time pressure and without interruptions. If the staff or the patient feels that their sayings are not understood, the staff must repeat, rephrase or write the required information on paper. In addition, the body language of staff such as facial expressions and movements, smiles, representations or signs can be used as a context and can help people with limited hearing to understand better.

If the patient is accompanied by a sign language interpreter, the staff must address their talk to the deaf or hard of hearing person, speaking natural but also with short interruptions in order to make time for accurate interpretation and also for the patient to have the time look at the presented material (e.g. medical examinations, X-rays, recovery instructions, etc.) as well as the doctor.

[96] Sapountzaki, G (2013). About Health Matters in Greek Sign Language. Educational workshops for doctors and paramedics, Hellenic Medical Students' International Committee, Alexandroupolis Health School.

The most important components in order to achieve successful communication are the following:

- the availability of lip-reading,
- calling the deaf or hearing impaired person with visual means from the waiting room,
- maintaining eye contact with the staff,
- adequate illumination.

In addition, it is suggested that there should be a quiet environment without any outside acts or noises that may distract people with hearing impairment, as well as reduced speed of speech. Depending on circumstances, the discussion topic should be defined from the beginning of communication and relatively simple vocabulary should be used within short sentences. Clearly, it becomes necessary to train health system's stuff, to have an emergency team and to provide a sign language interpreter free of charge. In case a deaf person is carrying a reference, there should be a notice about their hearing status. [97]

5.4.2 How do we recognize a person with hearing loss?

Health professionals should be informed about how to identify specific behaviors of people who might be related to hearing impaired patients. For example:

- They may not respond to the first call
- They may show their ear to justify their actions or prevent the behavior of other people
- They may use sign language
- They may use hearing aids or have cochlear implant
- They may have speech difficulties or an unusual accent
- Their speech may have grammar-editing difficulties and mistakes of accent
- They may focus strongly on faces and lips of other people
- They may usually ask others to repeat the question, or they request explanations repeatedly
- They may often ask "what?"
- They may look for places with proper light to communicate verbally
- They may avoid joining discussions with many people – they may seem as antisocial or isolated
- Their contribution to group discussions or lessons may be very little because, as they do not have full access to the words, they suspect that they might have not fully understood
- They may avoid communication - answer affirmatively or negatively with head nods, they answer very vaguely, or they tend to change the subject of discussion to something more common and controllable

[97] Sapountzaki, G, Georgokostopoulos, C, Basic principles and best practices for communication with Dead and Hard of Hearing, 2018

- They may find it difficult to follow complex instructions - misunderstandings or misconceptions are common in communicating with them
- They may be the last ones to finish their tasks
- They may depend on noticing what other people do rather than the instruction given to them
- They may speak low and deep, or with other unusual tone and voice intensity.

5.5 Process

5.5.1 Best communication practices

a) Lip-reading

Apart from written communication, lip-reading and the so-called "total communication" are alternative ways of communication. Lip-reading refers to the ability to "read" another person's mouth area, either without using the acoustic dimension of the speech, or in conjunction with the perception of some of the vocals, depending on the following conditions:

- Knowledge of the language

In order for the hearing impaired person to accomplish a successful lip-reading, they should already be informed about the structure and the vocabulary that will be used in order to be able to make better predictions.

To make it simple, if one travels abroad, it is not possible to learn the foreign language through the movements of the local people's lips, unless they have previously heard it, if he/she has not seen it in its written form if they are not familiar with the meanings of words and grammatical rules. Lip-reading is not a magical or automatic process but a combination of acquired knowledge and techniques that are ideally taught to deaf and hard of hearing people who already know visually or audibly the language.

- Physiology of lip-reading

Since lip-reading occurs at the mouth area, an organ having a diameter of very few centimeters, the lip-reader must have sharp eyes. During lip-reading the deaf or hard of hearing person should be totally alert, with the participation of both eyes and ears, thus the tension in the neck area increases, as the body movement does not assist in lip reading. Although it is not self-evident for most people, using oral communication or sign language, we have the space to move slightly so that we do not feel uncomfortable. In the case of lip-reading communication, immobility is required, especially if the lip reader has difficulty capturing the "signal" of his/her interlocutor from the best angle (and will not risk moving easily).

- Layout - technical obstacles

The light during lip-reading must be adequate and stable, the light source should focus as closely as possible on the speaking person and not be behind their face / body. The speaking person must be located face-to-face with the deaf or hard of hearing person, without moving too much in the room and without bending or turning – imagine what is the proper lighting

for a successful, classic photograph. Technical obstacles include anything that interrupts visual contact such as items that hide the mouth area, such as a moustache, or items inside the speaker's mouth, such as a gum, a microphone, a glass of water etc.

- Physical distance

The distance between the speaker and the lip-reader should allow the reader to distinguish small movements of the tongue and the lips. However, the distance should not be so small that it would not allow the reader to have an overall view of the speaker and it should not create a sense of invasion to the speaker's personal space. In general, for successful communication through lip-reading as well as in any type of communication, information is also drawn from factual elements that help in communication, such as posture, nodules, eyes, etc., which require a slightly longer distance between the speakers to receive the full picture of each other. Among the deaf and hard of hearing, the physical communication distance has been found to be somewhat longer than that of the hearing audience in each country.[98]

- Structure and thematic of communication

The content of words is easily understandable when it is predictable. Daily and trivial issues have a much more ordinary image on lips and expression, so one can communicate during the day with no anxiety when it comes to common subjects and everyday expressions. The more unknown the issues are - and possibly the more interesting and more demanding - the more they test the boundaries of the combinational knowledge, predictability, withdrawal of synonyms and ultimately the imagination of the reader. Therefore, for successful communication, the vocabulary should be relatively simple and understandable, the sentences must be complete rather than elliptical, while the syntax should be in the standard order (for example, subject-verb-object), and there should a reasonable order between the sentences. On the contrary, words that sound alike or look like they are pronounced alike might be a problem.

- Clarifications

During lip-reading, the reader should ideally be given the opportunity to ask for clarifications so that he/she can follow the flow of what is being said in the right direction and that no misunderstandings occur. If, at some point in the reading process, the reader realizes that a misconception has taken place, the reader should review what he/she thought was previously said, which is likely to be practically impossible in real time as the conversation continues. False assumptions during lip-reading misdrive communication or understanding and become rather discouraging when there is no room for repetition and clarification. The lip-reader must have a high level of self-confidence, patience, and sometimes humor to continue

[98] Hope, J. (2017). Consider needs of deaf people in space design. Retrieved, 12 September 2017 from:http://onlinelibrary.wiley.com/doi/10.1002/dhe.30262/pdf

communicating by rebuilding the perceived: when for example, he/she has thought that the word "suicide" was pronounced, tends to fill in the blanks with a specific content orientation.

- Lip reading dialogues and group discussions

When there is only one person speaking, it is likely that the speaker will be asked to repeat or reformulate the information. However, conversations between two people can be much more manageable. In dialogues it is much easier to place the people at the right spots in the room, to clarify everything they need, and to become familiar as they get to meet over and over again. Group conversations are more difficult to manage, by definition, and require several modifications to become successful. Communication in these cases cannot be too long among too many people. In any case, the recommendations of this section should be followed in terms of location, content, physical obstacles, and so on. Finally, before someone participates in a group discussion involving a deaf or hard hearing person, they should give a distinctive visual signal (for example, to move or tangle to be perceived) and in any case not to interrupt the other speakers.

- Familiarization with the method

An important factor for successful lip-reading is the familiarity of the deaf / hard of hearing with this method. Furthermore, familiarity with the specific vocabulary, the pronunciation of the speakers as well as the good knowledge of the written language.

- Duration and Fatigue

The lip reading process is, as we see, an extremely complex process that causes fatigue after a few minutes, let alone if it is a daily, continuous activity of all the deaf and hearing impaired. The maximum length of continuous mostly successful lip reading with numerical and cognitive criteria has been determined at approximately twenty minutes, without taking into account other communication conditions. Interaction is further complicated if the speakers are unknown to each other, if there is no possibility for the reader to interrupt and ask for some clarification or repetition, circumstances hearing impaired people face every day. As a result, this mental fatigue accumulates at the end of the working or school day. Apart from the time the successful lip-reading ends, it should be noticed that in the case of communication with unknown people, the first few seconds of the conversation are more detectable than communicative for the deaf or hearing impaired. Thus, the reader acquires an image of the speaker's articulation of the body language and its possible modes of expression before they begin to interact.

b) Sign Language

After we first make sure that the patient is a Sign Language user, we can offer to call a professional a Sign Language interpreter. This service is provided by the National Federation of the Deaf in every country. There is probably a choice to make the interpretation using relay service.

5.6 Patient scenarios

Think about what you would do in the following situations.

1. Allergy from insect bite. A deaf patient comes to the hospital while you are on duty. First, fill in the patient's intake form and then proceed with blood pressure and all the usual procedures should be done in such situations.
2. Suddenly someone feels sick in the bus. You are in the city bus. Suddenly, you find that a standing man right next to you sweats – looks pale and stumbles. Approach and give him first aid.
3. Gastroenteritis. You are at the emergencies on duty. Your next patient comes up holding their belly. Fill in the intake form. Then examine their belly on the examination bed. Finally give him instructions on their diet in the following days.

6 Access barriers

6.1 Introduction

Individuals are diverse, differing in age, size, abilities, talents and preferences. It is also known that variations in human abilities such as cognition, vision, hearing and speech, body functions, mobility may affect usability of products, services and spaces.

Built environments, transport systems and information are often inaccessible. Lack of access to transport can be a major barrier for a disabled person to reach his/her working environment and a frequent reason for a person with a disability being discouraged from seeking. There may also be physical barriers to job interviews, to the actual work setting, and to attending social events with fellow employees.

Access to information can be a further barrier for people with sensory disabilities (visual and hearing impairments) constituting the recruitment process, the everyday activities as well as the communication with employers, co-workers and customers difficult. Information is frequently unavailable in accessible formats, and some people with disabilities are unable to access basic information and communication technologies without special provisions.

A main reason for the above could be that the built environment and accompanying services are most of the times designed with a "standard" user in mind and, therefore, do not fulfil the wide range of differing needs of individuals. Individuals that fall into the category of "persons with reduced mobility", including the individuals with disabilities, the elderly, children, pregnant women, parents with small children, individuals with differing dimensions, travelling people carrying luggage, individuals carrying loads etc., therefore, cannot participate in life activities as equally as others. It is also known that any provisions for inclusion of these user groups benefit all user groups and provide easier use and access for all.

In Article 25, the United Nations Convention on the Rights of Persons with Disabilities (CRPD) "recognizes that persons with disabilities have the right to the enjoyment of the highest attainable standard of health without discrimination on the basis of disability. States Parties shall take all appropriate measures to ensure access for persons with disabilities to health services that are gender-sensitive, including health-related rehabilitation. In particular, States Parties shall:

(a) Provide persons with disabilities with the same range, quality and standard of free or affordable health care and programmes as provided to other persons, including in the area of sexual and reproductive health and population-based public health programmes;

(b) Provide those health services needed by persons with disabilities specifically because of their disabilities, including early identification and intervention as appropriate, and services designed to minimize and prevent further disabilities, including among children and older persons;

(c) Provide these health services as close as possible to people's own communities, including in rural areas;

(d) Require health professionals to provide care of the same quality to persons with disabilities as to others, including on the basis of free and informed consent by, inter alia, raising awareness of the human rights, dignity, autonomy and needs of persons with disabilities through training and the promulgation of ethical standards for public and private health care;

(e) Prohibit discrimination against persons with disabilities in the provision of health insurance, and life insurance where such insurance is permitted by national law, which shall be provided in a fair and reasonable manner;

(f) Prevent discriminatory denial of health care or health services or food and fluids on the basis of disability."[99]

The concept of "Accessibility" refers to the environment and the features that allow safe, comfortable and independent access to services and goods. This access should take place without discrimination based on sex, age, disability or other characteristics. The term also refers to functionality, i.e. if one can use a service. Moreover, accessibility refers to the communication, when one can have access to information as the rest of the population.[100]

According to the new Greek Building Regulations published at the Official Government Gazette (OGG 79/A'/9-4-2012)[101], accessibility is the characteristic of the environment that allows all persons, regardless of sex, age or other characteristics such as size, strength, nationality, to have access to it and approach and use all infrastructure and services autonomously, safely and comfortably.

In Article 9 the CRPD states:

"1.To enable persons with disabilities to live independently and participate fully in all aspects of life, States Parties shall take appropriate measures to ensure to persons with disabilities access, on an equal basis with others, to the physical environment, to transportation, to information and communications, including information and communications technologies and systems, and to other facilities and services open or provided to the public, both in urban and in rural areas. These measures, which shall include the identification and elimination of obstacles and barriers to accessibility, shall apply to, inter alia:

(a) Buildings, roads, transportation and other indoor and outdoor facilities, including schools, housing, medical facilities and workplaces;

(b) Information, communications and other services, including electronic services and emergency services.

2. States Parties shall also take appropriate measures:

99 United Nations (2006) "Convention on the Rights of Persons with Disabilities". Available at http://www.un.org/disabilities/documents/convention/convoptprot-e.pdf

100 E.S.AmeA. (National Confederation of Persons with disability) (2008). Policy planning in disability-trainee manual. Athens.

101 Greek Official Governmental Gazette 79A/09.04.2012 – New Building Regulations

(a) To develop, promulgate and monitor the implementation of minimum standards and guidelines for the accessibility of facilities and services open or provided to the public;

(b) To ensure that private entities that offer facilities and services which are open or provided to the public take into account all aspects of accessibility for persons with disabilities;

(c) To provide training for stakeholders on accessibility issues facing persons with disabilities;

(d) To provide in buildings and other facilities open to the public signage in Braille and in easy to read and understand forms;

(e) To provide forms of live assistance and intermediaries, including guides, readers and professional sign language interpreters, to facilitate accessibility to buildings and other facilities open to the public;

(f) To promote other appropriate forms of assistance and support to persons with disabilities to ensure their access to information;

(g) To promote access for persons with disabilities to new information and communications technologies and systems, including the Internet;

(h) To promote the design, development, production and distribution of accessible information and communications technologies and systems at an early stage, so that these technologies and systems become accessible at minimum cost".[102]

Another important notion described in the United Nations' Convention on the Rights of Persons with Disabilities is the "reasonable accommodation" requirement. This refers to "necessary and appropriate modification and adjustments not imposing a disproportionate or undue burden, where needed in a particular case, to ensure to persons with disabilities the enjoyment or exercise on an equal basis with others of all human rights and fundamental freedoms (see Article 2 of the CRPD).[103]

This growing need for environments and services that offer greater equity, accessibility, and usability for all people has led to the development of "the design for all" approach.

The "design for all concept" is an umbrella term that unites concepts of inclusive design, adaptive environments, universal design, barrier-free design, accessible design. Even though there are subtle differences in definitions of these concepts, the main idea of all is that the built environment and services should be designed in a way that all people, regardless of mobility, age, gender, culture, size, sensory functionality, and body functions can access and use the environment and participate in life activities equally to the greater extent possible. Nowadays, universal design is more commonly associated with "design for all" concept and is interchangeably used.

102 United Nations (2006) "Convention on the Rights of Persons with Disabilities". Available at http://www.un.org/disabilities/documents/convention/convoptprot-e.pdf

103 United Nations (2006) "Convention on the Rights of Persons with Disabilities".

The Center for Universal Design at North Carolina State University defines universal design as "the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design".[104]

In order to specify concretely the design for all concept, the principles of universal design have been developed. There are seven principles for universal design which are: (1) equitable use, (2) flexibility in use, (3) simple and intuitive design, (4) perceptible information, (5) tolerance for error, (6) low physical effort, and (7) size and space for approach and use.

- Equitable use principle aims to achieve designs that are "useful and marketable to people with diverse abilities". This principle implies that identical means of use should be provided for all users and, in cases where this is not possible, the means provided should be equivalent. Privacy, security, and safety provisions should be equally available for all users. Designs that appeal to all users should be aimed. Such an approach will prevent or keep segregation of users with different abilities to minimum. For example, rather than providing an accessible entrance separate from the main gate, an entrance space with a sensor type automatic door where all users enter the building from the same space by same means conforms with equitable use principle. Similarly, an elevator located next to an escalator will help prevent segregation among users with different mobility levels.
- Flexibility in use principle refers to design that "accommodates a wide range of individual preferences and abilities". Providing alternate choices for the same use is fundamental for this principle. Designs that give access and use for users with different attributes, that offer adaptability to the user's pace and that facilitate the user's accuracy and precision should be aimed. For example, devices than can be used either left- or right-handed and be grabbed with small amount of force will give different options in use and thus will provide flexibility in use. Handrails on both left and right sides of a walkway, or double leaf doors will provide safety for both left-and right handed users. Grab bars located at multiple heights in showers or bathtubs will allow for both seated and standing use.
- Simple and intuitive design principle suggests that "use of the design is easy to understand regardless of the user's experience, knowledge, language skills, or current concentration levels". Designs with no unnecessary complexity, that are consistent with user expectations and intuition, and that can accommodate variety of literacy and language skills form the basics of this principle. Similarly, in simple and intuitive designs, available information should be consistent with its importance and effective prompting and feedback in the use process should be provided. For example, single level faucets are simple and intuitive to use and use of icons in can reduce complexity for users.

104 The Center for Universal Design (1997). The Principles of Universal Design, Version 2.0. Raleigh,NC: North Carolina State University.

- Perceptible information principle is defined as "designs that communicate necessary information effectively to the user regardless of ambient conditions or the user's sensory abilities". Uses of alternate modes, providing adequate contrast with the surroundings are important factors that will maximize legibility in transferring the essential information. Providing compatibility with a variety of techniques or devices used by people with sensory limitations is also essential for this principle. For example, some ticketing devices for public transport machines have push buttons for audio instructions providing users with alternate forms of communication.
- Tolerance for error principle refers to designs "minimizing hazards and adverse consequences of accidental or unintended actions". Providing warnings of hazards and danger and ability to remove the hazard caused by unconscious action are key elements in offering tolerance for error. Tolerance for error can be provided in designs by placing mostly used elements in most accessible locations and using features that are fail safe. Undo command in most computer software and kerbs used at sides of ramps preventing slipping off are basic examples of tolerance for error.
- Low physical effort principle defines designs that can be "used efficiently and comfortably and with a minimum fatigue". Designs that can be operated or used with minimal amount and repetition of physical effort where neutral body position can be sustained translate into low physical effort designs. Lever type door handles that can be opened with fist or elbow with no requirement of significant force to be applied are examples for low physical effort design.
- Size and space for approach and use principle means that "appropriate size and space is provided for approach, reach, manipulation, and use regardless of the user's mobility, posture or body size". Providing designs that can be reached by all users, standing or seated, by all users with different hand or grip sizes should be aimed for this principle. Important elements lined at sight level for all users, wider approach spaces for users with different attributes can help to fulfil this principle. Lower counter sections at information desks and use of full length transparent surfaces at the side of the doors help reach and visibility for users with different heights.

Whereas these principles are important in specifying concretely the "design for all concept", it should be noted that all principles may not be applicable to all designs and may need contextual modifications. Nevertheless, they provide guidance in creating environments and products welcoming all users; and the main goal in designing for all should be providing inclusion of all people by good, equitable, and accessible designs.

6.2 Accessibility guidelines

The following guidelines are based on the "design for all" guidelines issued by the Hellenic Ministry of Environment and Energy. Their principles are based on European and International guidelines, thus they can be easily implemented in health service infrastructure located in Bulgaria. The guidelines cover the following subjects:

- Configuration of external areas for pedestrian movement

- Design of parking spaces
- Public buildings
- Ramps
- Stairs and staircases
- Mechanical means for connecting different levels
- Signage
- Buildings' entrances
- Public toilets
- Accessible examination rooms

6.2.1 Configuration of external areas for pedestrian movement

a) Pavement Design Elements

Pavements are defined as pedestrianized urban roads, which are intended for the continuous, safe and unobstructed circulation of pedestrians and persons with restricted mobility. Pavement width is defined as the distance from the street-side line up to the edge of the kerb.

Minimum pavement width is defined as 2.05 m, in which are included 0.20m for architectural protrusions, 1.50m for free pedestrian zone and 0.35m for signage, protective rails and the construction of a kerb.

The free pedestrian zone is defined as the minimum width required, used for the continuous, safe and unhindered traffic for each category of users.

The minimum width of the free pedestrian zone is defined as 1.50m, which is the minimum required for comfortable meeting of a pedestrian with a user of a wheelchair of any form.

Free walking height is defined as the minimum actual height in the free walking zone for the smooth movement of the pedestrians; it is equal to 2.20m.

A tactile surface indicator for the blind is a strip of the free pedestrian zone, of different texture and colour, which aims in the guidance and safe movement of people with visual disabilities. It is installed at a distance of 0.50 m at least from the building line, with a width of 0.30 up to 0.40m.

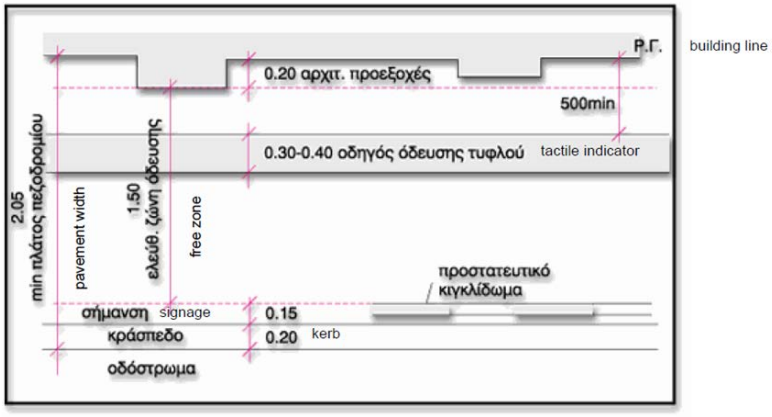


Figure 33 : Pavement width

The height of the pavement should not be greater than 7-10cm, because then it creates problems in the configuration of the pedestrian crossings.

Longitudinal inclination in the direction of the free pedestrian zone must not exceed 12%. Transverse pavement slope is the slope of the pavement at a vertical direction to the direction of the free pedestrian zone and should not exceed 4% with a desired 1-1.5%.

The floor materials must ensure slip resistance, homogeneity, stability, durability and us, low reflectivity and ease of cleaning and maintenance under both normal and special weather conditions (rain, snow, frost, etc.).

b) Urban equipment - Obstacles

Urban equipment is defined as permanent or temporary facilities of the pavement, which aim at the safety, information and service of all its users. It must always be placed outside the free pedestrian zone. An additional width of 1.30 m is recommended to be added to the minimum pavement width, to create an urban equipment zone.

When designing the urban equipment zone, provision should be made, every 100.0m in central areas and every 200.0m in remote ones, for the creation of spaces of dimensions 0.80 * 1.30m for resting of wheelchair users, combined with other elements of urban equipment. Components of urban equipment such as mailboxes, garbage cans, telephone booths etc. should be designed so that they can be easily traceable by blind pedestrians using white cane and be easily used by persons of short statute. Their operating parts must be mounted between 0.90 and 1.20 m from the ground.

Obstacles at a height of less than 2.20 m, inside or outside the free zone for pedestrians, should be avoided. In any case, they should be projected on the ground in a way detectable by white cane users.

c) Signage

Signage is the set of symbols and texts that facilitate the orientation and movement of all people in a structured environment.

The different types of signage are the following:

- Floor-mounted, essential for informing people with visual disability. Achieved by changing the texture of the floor and, at the same time, intense colour contrast.
- Signs which, if they are on a pole or on special bases, must always be placed outside the free width and height. If they are on the wall and provide permanent information -street names, house numbers, etc.- they should be placed at a height of 1.40-1.60 m from the floor, be embossed and available in BRAILLE.

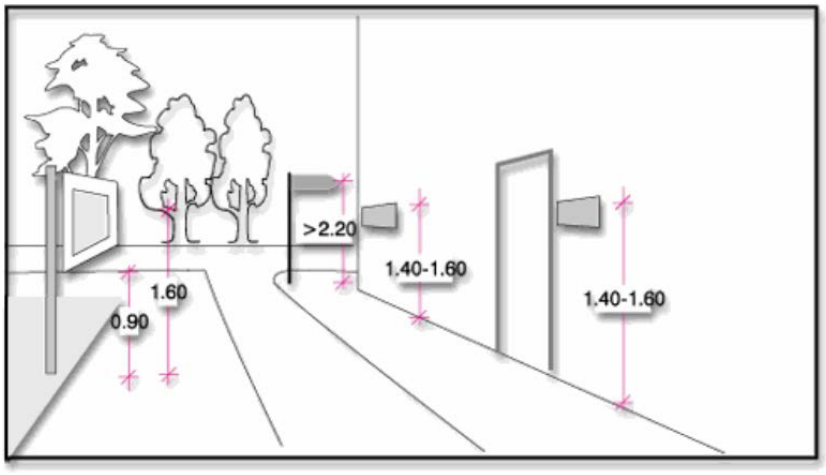


Figure 34 : Signage

d) Pedestrian crossings – pedestrian crossing islands

Pedestrian crossings should be formed every 100m at least, vertically to the traffic flow. Minimum width is defined as 2.50m.

Kerb ramps should be at least 1,50m. wide and be marked with tactile indicators.

At crossings longer than 12m., pedestrian crossing islands at least 1.5m. wide should be created. The beginning and end of the island must be marked with material detectable by white cane users.

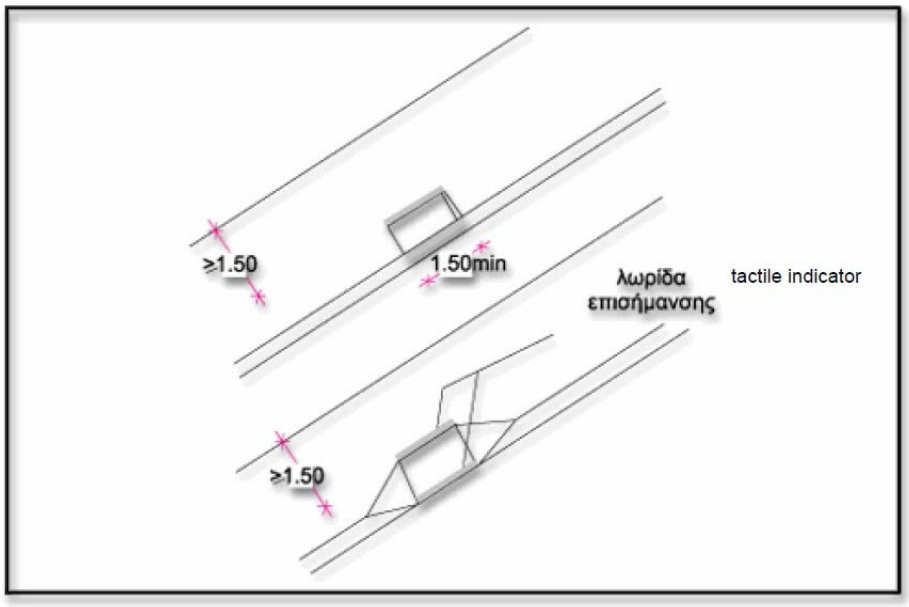


Figure 35 : Kerb ramps

Ramps with a width of at least 1.50 m, or equal to the width of the pedestrian crossing, should be created at pedestrian crossings, pedestrian crossing islands, car park recesses, transport stops, etc.

In cases of pavements of small width, lowering the whole corner at the intersection of the two streets is recommended.

Pavement height (m)	Ramp slope		Required length	
	Desired (%)	Minimum (%)	Desired (m)	Minimum (m)
0,00 – 0,07	5 (1:20)	8 (1:12)	1,40	0,84
0,071 – 0,10	5 (1:20)	8 (1:12)	2,00	1,20
0,101 – 0,12	5 (1:20)	8 (1:12)	2,40	1,42
0,121 – 0,15	5 (1:20)	8 (1:12)	3,00	2,20
0,151 and up	5 (1:20)	8 (1:12)		

6.2.2 Design of parking spaces

Accessible parking spaces ensure easy access through bigger than usual dimensions (about 3.50X5.00m).

Accessible parking spaces parallel to the pavement should be avoided. If this is not possible, then the length of these spaces should not be less than 6.00m so that it is possible for a person to pass between two parked -one behind the other - cars.

Parking spaces for disabled people should be at the shortest possible distance from building entrances - if possible less than 50m.

The proportion of car parks for people with disabilities is 5% of the total number of spaces foreseen (at least one position in small parking spaces). This space must be marked with the International Symbol of Access, at a prominent spot as well as on the floor.

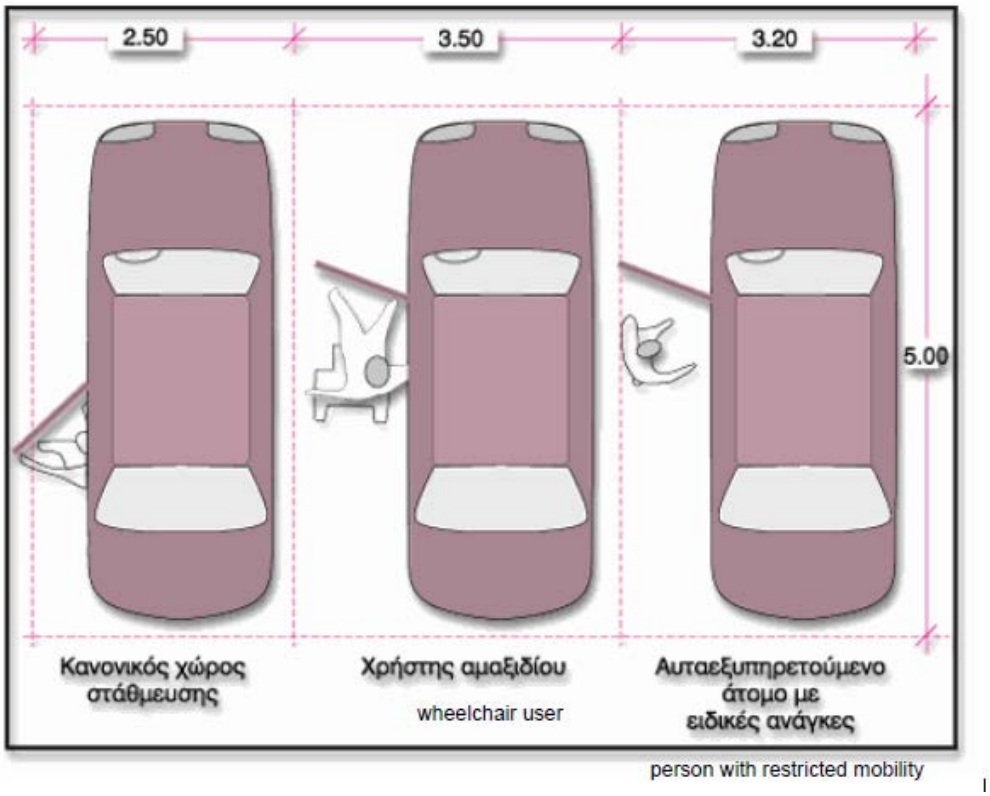


Figure 36 : Parking spaces

6.2.3 Buildings used by the general public

Public buildings are defined as buildings or parts of buildings or structures or open - air areas limited by built components and used by the public for social, economic, commercial, religious, scientific, educational, cultural, recreational or sporting events and activities as well as for temporary stays and waiting for transport vehicles.

This category includes, according to their use:

- Buildings of public services/ administrative buildings (post offices, offices, banks etc.)
- Sports facilities
- Facilities for social, cultural and scientific events
- Cultural facilities
- Restaurants and recreational facilities
- Exhibition areas
- Teaching spaces
- Buildings with commercial use (shopping malls, stores etc.)
- Facilities of temporary accommodation
- Health and welfare facilities
- Special purpose buildings (temples, courtrooms, transport stations etc.)

a) Entrances - Reception halls

At least the main entrance of the buildings used by the public as well as the entrances used by the public to enter the buildings from underground car parks - if provided - should be accessible by disabled persons and in particular by wheelchair users. These entrances must be constructed in accordance with the accessibility guidelines.

At strategic areas close to the main entrance, at the same level, ramps, elevators or any other means cover height differences should be provided in accordance with the relevant guidelines: "Ramps of persons and wheelchairs" and "Mechanical means of covering height differences".

Where reception or transaction counters are provided, a part of them at least 1.00 meters in length must be made at a height 0.80m from the floor, while, where telephone booths are provided, they should be manufactured with the device and controls at a height of 0.90-1.20 m from the floor.

b) Signage

For buildings where many services are housed, right after the entrance, a simplified diagram of the services offered as well as a notice board should be installed at a suitable space. Special care must be taken to ensure that the services diagram is embossed or in BRAILLE writing and is located at a position and height accessible for people with vision disabilities.

All buildings used by the public should have signage according to the relevant: "Signage" guidelines.

c) Shared spaces - Horizontal and vertical circulation

All public areas must be accessible to all users, and disabled people in particular.

Necessary conditions for this are:

- the existence of corridors of net width of at least 1.50 m
- the presence of 0.90m clear width doors, opening - with the maximum force required to open them being 15 Newton- or sliding, that will carry a vertical skylight - where it is allowed from their use - to control the movement from the other side of the door and have a handle of L or D shape,
- the existence of obstacle free spaces, 1.50m in diameter, for rotation of wheelchair users;
- provision of free spaces, each of dimensions of 0.80 * 1.30m, for wheelchair users - where appropriate seating is available for visitors - but also special seats with hard cushions with a depth of 0.40m and height 0.55-0.60m with armrests for people with mobility impairments. In cases of amphitheatre rooms, places for wheelchair users should be provided at the first row of flat sections or in the last row next to corridors leading to emergency exits, by making folding or removing seats so that the wheelchair user can have sufficient space. In this case the required dimensions of the space is 0.80 * 1.30m minimum.
- avoidance of height differences at any level or covering of them - where they can not be avoided - with ramps with a maximum 5% gradient or a mechanical device
- the construction of stairs - where required - with at least two steps, constructed in accordance with accessibility guidelines
- the construction of anti-slip, homogeneous, stable floors easy to clean and maintain with little reflex, , without floor joints that can create vibrations in the movement of wheelchair users, without thresholds, or any other element that can protrude or sink to the floor more than 2cm
- the existence of at least one toilet per floor to serve wheelchair users which will also act as a "family type" toilet and will be designed in accordance with the "Public sanitary facilities" guidelines.

d) Fire protection

As far as the structural elements of the building for fire protection are concerned, the provisions of the building regulations apply, taking into account that fire safety doors should have suitable handles and require low thrust with a suitable return mechanism.

As the only way people with disabilities move between the different levels of a building is through a lift, which they should use as an escape exit in case of emergency, all public buildings should have at least one elevator designated as means of escape. Thus the elevator shaft as well as corresponding landings must constitute fire compartments of the building.

In special cases, shutes can be used as escape means.

6.2.4 Ramps

The main features of a ramp are its slope and width which determine the degree of comfort in its use. The width of a ramp also determines the possibility of simultaneous use by one or more people with or without a wheelchair.

a) Operating Elements

The slope of the ramp is the main feature of the ramp and determines its comfortable and safe use. It ranges from 0% - the ideal one - and can reach 10% depending on its length and its use.

	Height difference	Way of bridging difference	Max slope	Minimum length
1.	0.00-0.02	small ramp	1:1 or 100%	0.02
2.	0.02-0.04	small ramp	1:2 or 50%	0.04
3.	0.04-0.10	ramp	1:10 or 10%	1.00
4.	0.10-0.25	ramp	1:12 or 8%	3.00
5.	0.25-0.50	ramp	1:16 or 6%	8.00
6.	0.50m& more	ramp or mechanical means (lift, elevator etc.)	1:20 or 5%	10.00 above 10 m. a 1,5m. landing should be created

The length of a ramp is related to its slope, so that the combination of these two features ensure the greatest possible safety and comfort for the user. When the length of the ramp is over 10.00m, the construction of a horizontal section is required (landing) of a minimum length of 1.50 m and a width that will not be less than the width of the ramp itself.

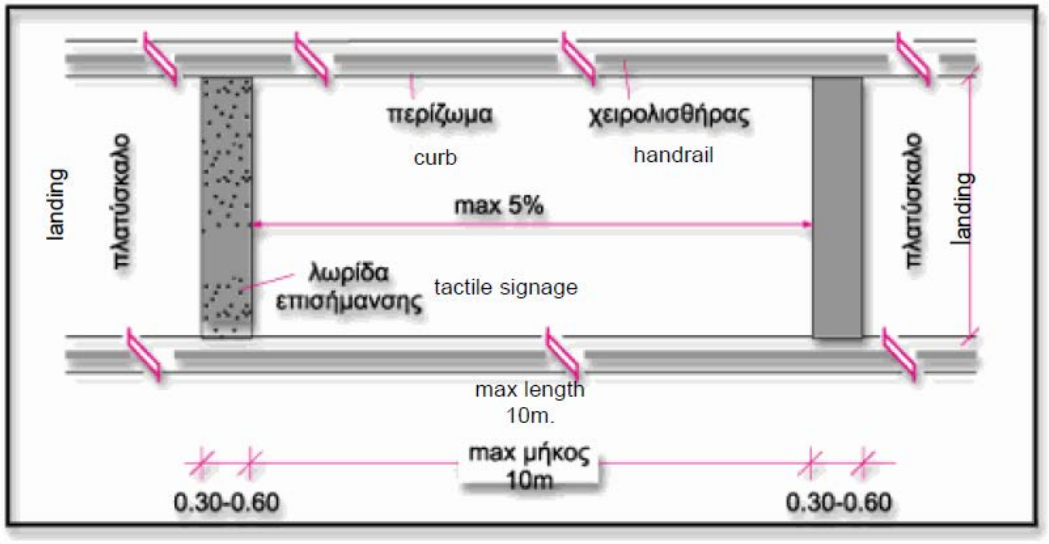


Figure 37 : Ramp

The width of the ramp must ensure safe and comfortable movement of its user. The recommended free ramp width generally is 1.30m. This width does not allow intersection of two wheelchair users. In this case the minimum required width is 1.70m.

In addition to the landings mentioned in paragraph 2.2, landings must be constructed both at the beginning and at the end of a ramp as well as at every change of direction. The landings at changes of direction are called manoeuvring landings and must ensure that wheelchair users are able to make a full turn, which requires free space of 1.50m in diameter.

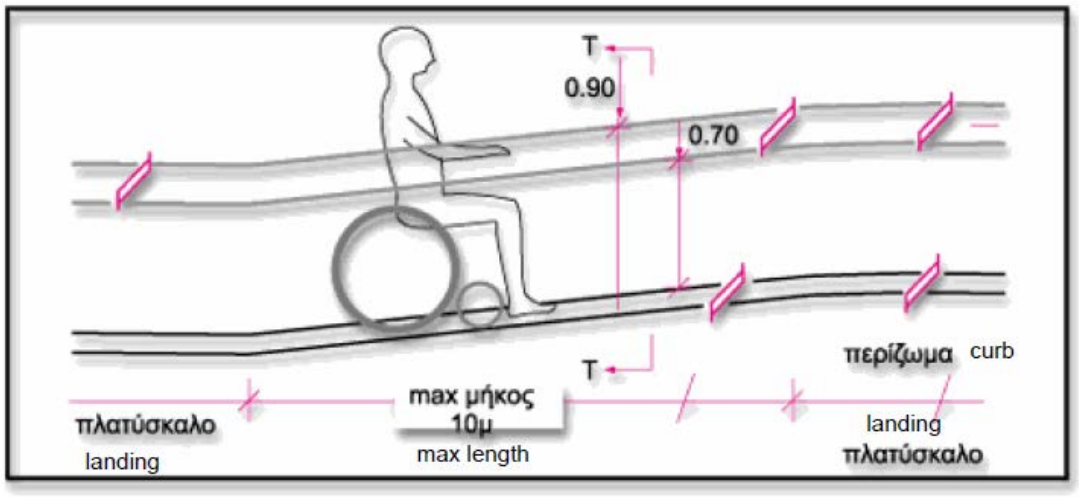


Figure 38 : Ramp

Ramp floor is the surface of the ramp used by its users. This surface must be non-slip, homogeneous, stable, wear-resistant and weather conditions' resistant - for outdoor ramps – non- reflective and easy to clean and maintain.

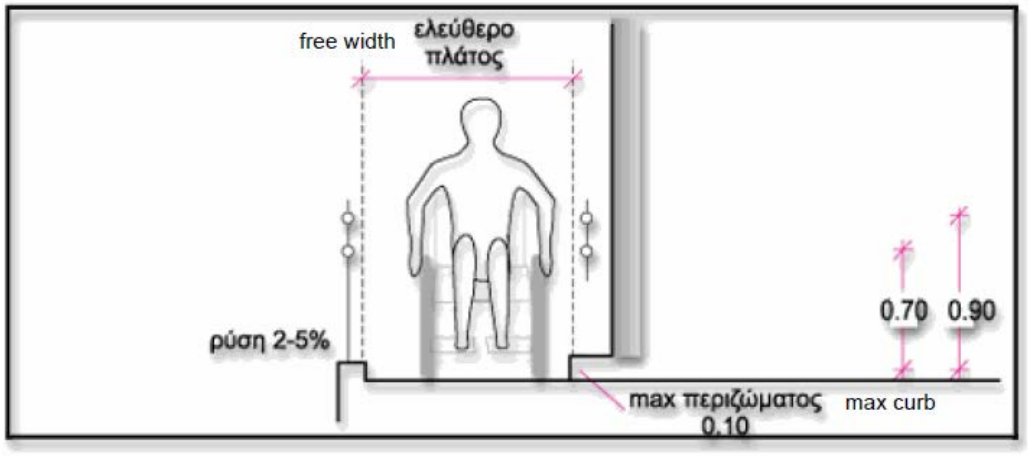


Figure 39 : Ramp equipment

b) User Protection and Safety

This includes railings, handrails, skirting.

- Railings

Their main features are their height and construction, which must safeguard the user from a possible fall or injury, while providing the ability to safely place handrails at a suitable height. The most appropriate overall height of rail is considered to be 0,90 m.

- Handrails

The material, its shape and its anchorage must ensure the user's restraint, without at the same time interrupting the movement of the palm of the user's hand over it. The surface of the handrail should be smooth. Its shape must allow for a safe and comfortable grip by palm of the user. One such form is that of a round or a rounded cross-section, at least 4-5 cm in diameter.

The anchorage of the handrail can be made on the railings or on the wall. The free handrail distance from the final surface of the railing or wall must be 4.5-5cm. This surface must be smooth to prevent injury to the joints of the user's fingers.

The gap between the handrail and the top of the railing should be between 5 and 15cm. It is recommended to always place two continuous handrails on both sides of the ramp at 0.90 and 0.70m heights from the floor to make it easy to use for all users as well children and wheelchair users. If the handrails are to be used as auxiliary means for traction of the user, the free distance between them should not exceed 0,90 m. Finally, the handrails should always protrude at least 30 cm horizontally at the beginning and end of a ramp and continue on its landing.

- Curb (Skirting)

It is necessary to prevent the wheels of the wheelchair to approach the vertical elements of the railing, causing a risk of injury to the user and the diversion of the wheelchair. The height of the skirting should range from 5 to 10cm. If there is no curb on either side of the ramp, and if a railing is installed, a horizontal bar should be placed 10cm from the floor.

- Signage

It is essential, wherever there is a ramp, to be properly marked, especially if its users are also people with visual disabilities. So in the beginning, the end and the points of change of the ramp direction, signage should be installed, vertical to the axis of the users' movement, with a width of 0.30-0.60m, of different texture and colour than the floor of the ramp.

6.2.5 Stairs and staircases

Steps consist of two intersecting levels: - a horizontal, the tread, and a vertical or inclined, real or imaginary, the riser. The intersection of these two levels is called the edge of the step.

The main features of a staircase are height and width of its steps, which ultimately determine its slope and by extension the degree of comfort in use. Also the width of the staircase which is determined by the distance between the vertical elements (walls, railings), existing or conceivable.

a) Slope

The slope of the staircase determines its comfortable and safe use. The slope is essentially the gradient of the staircase and depends on the arithmetic relation between the height and width of its step, in the position of the conceivable ascending line of the scale. The recommended dimensions of riser and tread width, so that their comfortable and safe use is ensured, are 15cm and 33cm respectively.

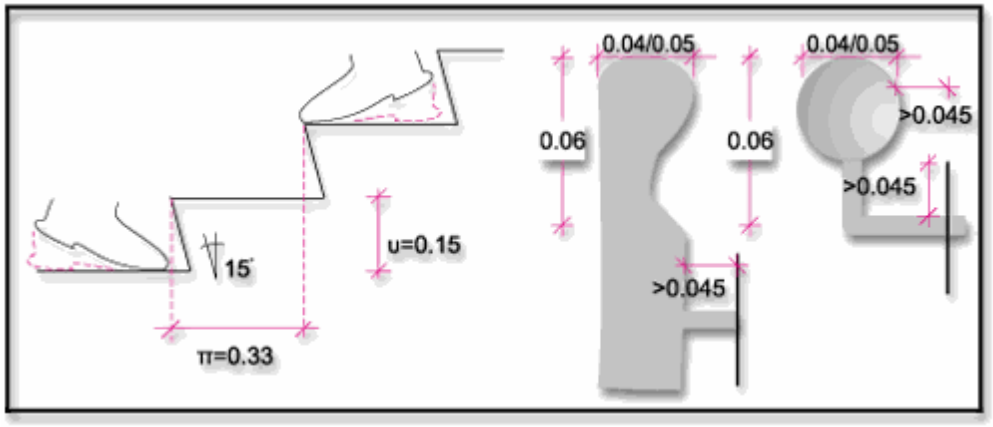


Figure 40 : Recommended design, recommended handrails

b) Landings

Landings are the steps whose width is greater than that of the treads. They serve mainly for temporary and safe rest of the user, or for change of direction or to mark the end or the beginning of a staircase. Their width should be at least 1,20m. Landings should be placed every 10 or 12 risers, even when there is no change of direction. Single risers should not be created, these small height differences should be bridged by ramps of 5% slope.

c) Staircase surface

This surface must be non-slip, homogeneous, stable, wear-resistant and weather conditions' resistant - for outdoor ramps – non- reflective and easy to clean and maintain.

d) User protection and safety features

This includes railings, handrails and skirting with characteristics similar to the ones installed at ramps.

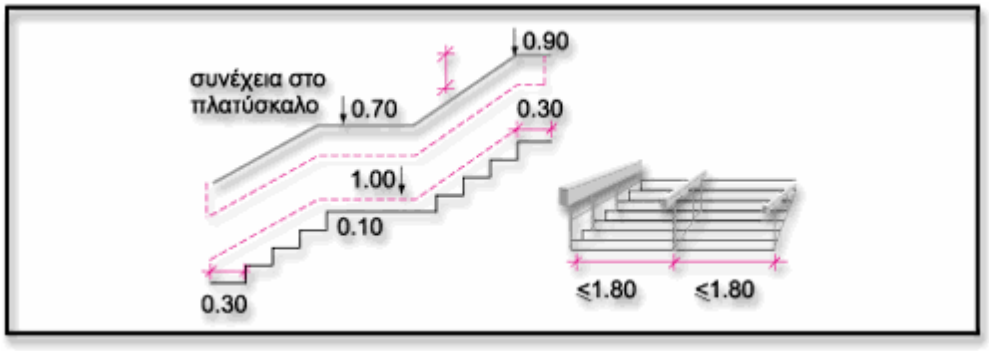


Figure 41 : Recommended handrail design

e) Signage

It is essential, wherever there is a staircase, to be properly marked, especially if its users are also people with visual disabilities. So in the beginning, the end and the points of change of direction signage should be installed, vertical to the axis of the users' movement, with a width of 0.60m, of different texture and colour than the floor of the staircase. Furthermore, the treads' edges should be marked with colour contrasting material.

6.2.6 Mechanical means for connecting different levels

Level differences at buildings and outdoor spaces should be avoided.

Inevitable level differences in new buildings and outdoor public areas, must be covered by ramps with a maximum gradient of 5%. In existing buildings and outdoor public spaces, if level differences exist, they should be covered preferably with ramps of 5% to 8% slope. If this is not possible, one of the following mechanical systems must be selected

- Elevator
- Vertical lift
- Stair lift

Escalators and conveyor belts are not included in the above category of mechanical media, since they cannot be used by all people.

a) Elevators

Elevators must be placed in strategic locations of the buildings, near the main entrance and the stairway. Their existence must be properly marked. Accessing them from the level the pavement or the parking space must be level or made through ramps of 5% maximum inclination. In buildings with more than one lifts, at least one must be accessible. This lift should be able to be called independently of the others, especially when the lifts are automatic and there is only one switch for all.

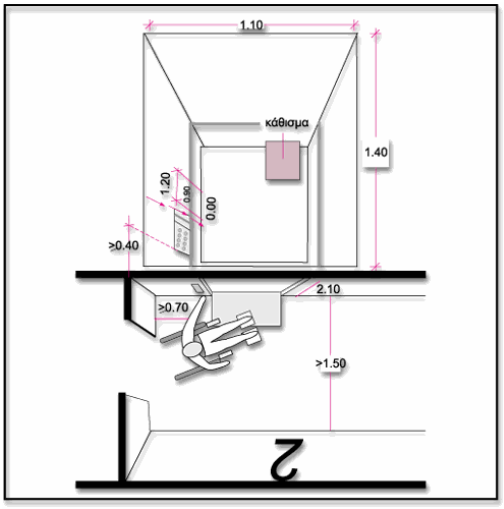


Figure 42 : Design of typical lift

- Elevator chambers

Minimum (internal) chamber dimensions: 1.10x1.40m. Entrance must be made from the smallest side (1.10m) of the chamber. These dimensions do not allow a wheelchair to rotate 180 °, if there is such a requirement then the chamber must be dimensioned 1.50x1.50m. If the entrance and exit are made at an angle of 45 ° and through two doors, then the minimum dimensions are 1.40x1.40m. In buildings with four floors and more, it is preferable for the elevator to be dimensioned 1.10 * 2.20m to be able to serve a stretcher. The inner walls must be of high strength and from non-reflective material. They must have colour contrast with the floor. The floor must be slip-resistant, smooth and facilitate wheelchair manoeuvring.

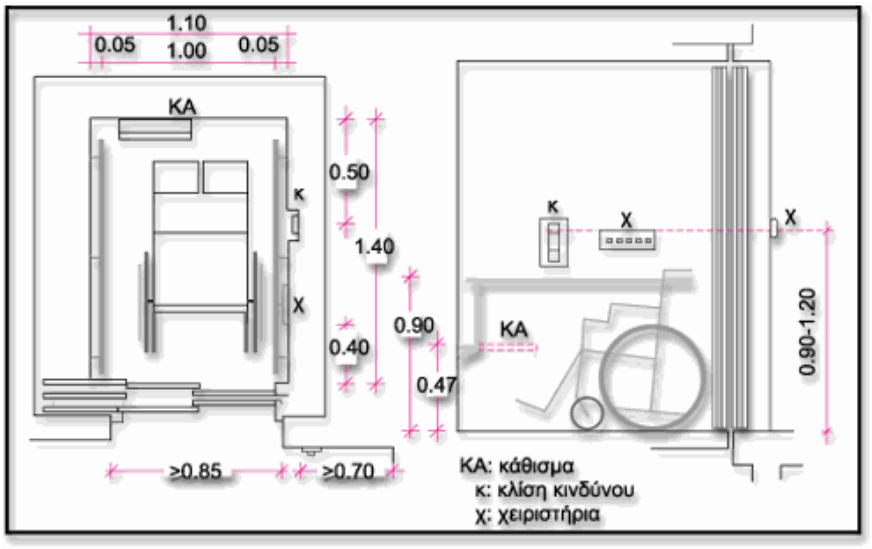


Figure 43: Design of typical lift. KA = seat, κ = alarm button, x = buttons

- Doors

The minimum clear opening of the door must be 0.85 m. Buildings used by the public must have automatic sliding doors. The speed at which an automatic door is opening is a decisive factor of safe and autonomous use by people with disabilities. This speed should not exceed

0.30 m / s and the waiting time must be not less than 6 sec. Furthermore, doors must have a photocell and a mechanism which opens them again if they encounter any resistance.

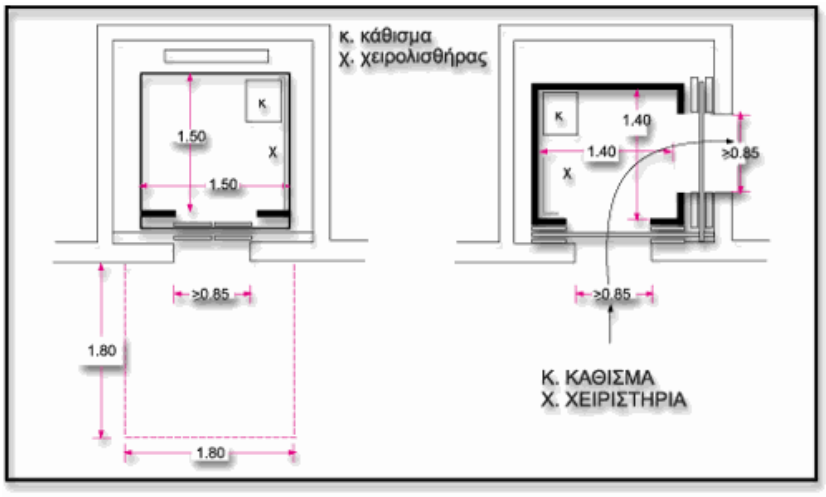


Figure 44: Chambers K = seat, X = buttons

The distance between the elevator door and the opposite wall, staircase or obstacle, must be at least 1.50m. Enough space to move and manoeuvre a wheelchair on the right and / or left of the door should be available. The door and / or its frame must have a strong colour contrast to the wall. On the floor, in front of entrance of the lift, there must be a tactile, in bright colour, warning for blind and visually impaired people. The entrance must be marked with the symbol of the lift and, if it also serves people with disabilities, with the international symbol of access. The number of the floor must be stated on the wall next to or above the elevator buttons as well as opposite the door (on the wall) using bright coloured tactile numbers or letters.

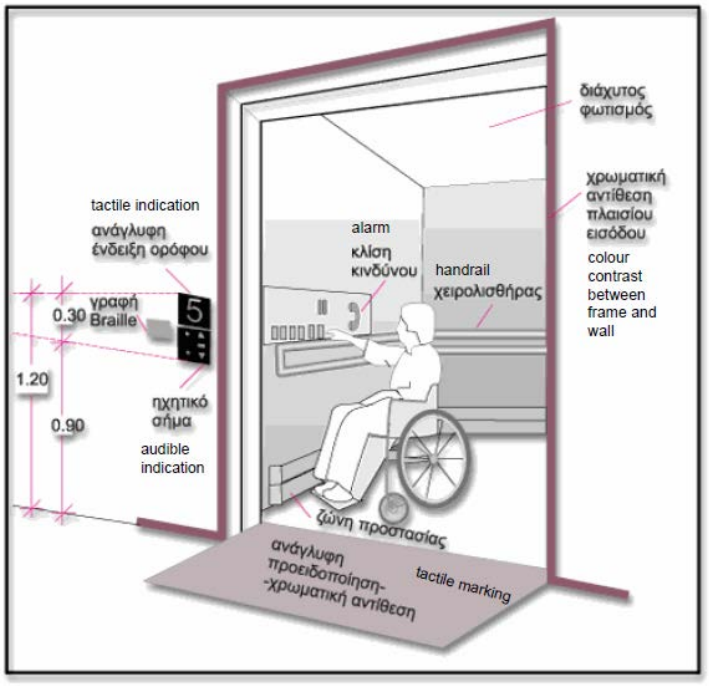


Figure 45: Equipment

- Control buttons

All controls must be placed at a height of 0.90-1.20 m from the floor. Must have colour contrast with their background and be positioned in a reasonable, standardized manner. The switches must have width or diameter of at least 25 mm, be spaced at least 10mm apart, be lighted and have embossed their function symbol. It is desirable for them to be placed at an angle to the wall.

An alarm system must be available, preferably a phone, in colour contrast to the wall on it is mounted. Its instructions for use must be short and simple, written with distinctly embossed characters and repeated in Braille.

The control buttons outside the lift should be placed near the door and be accompanied by instructions in Braille.

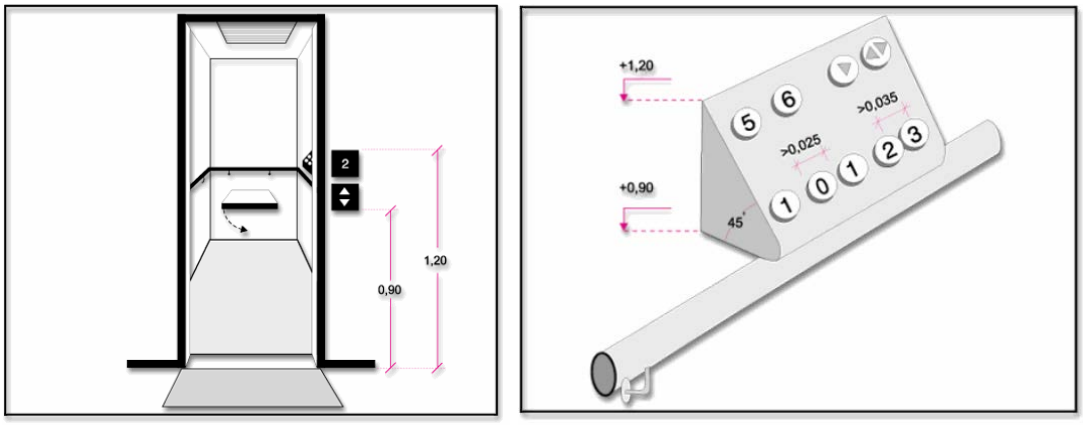


Figure 46: **Control buttons**

- Motion and position indicators

When lifts are installed in buildings used by the general public, the following indications relating to the lift's movements must be provided:

Outside the cabin

- Elevator comes.
- Ascending and descending arrows
- Cabin arrival sound signals (different for ascending and descending).

Inside the cabin

- Floor indication
- Audible indication of floor
- Ascending and descending arrows
- Cabin arrival sound signals (different for ascending and descending).

- Lift safety

The buildings used by the public must have at least one lift that serves disabled guests with a backup power supply, preferably from a generator. In case of an emergency, disabled people must have priority in using this lift.

b) Platform Lifts

When it is not possible to bridge a height difference at an already formed interior or outdoor space with a ramp, a vertical or stair lift should be installed. This installation must be properly marked.

- Vertical movement platform lifts

Usually cover minor height differences. Where possible, it should be preferred compared to a stair lift. Must safely transport a wheelchair user. Minimum Platform Dimensions 0.90x1.20m. Lifting capacity 250 kg. The movement of the lifts must be controlled by controls on the platform and at the beginning and end of the route (fixed points). Entry-exit points must be provided with adequate space for comfortable approach and wheelchair manoeuvre, of minimal dimensions 1.50x1.50m.

- Stair lifts

They are mounted on the stairs and cover small and large height differences, especially where it is impossible to install a vertical lift. The carrier is a platform that connects through an assembly system with the wall and moves parallel to the steps of the ladder. When the lift does not work, it folds. Minimum dimensions 0.80x1.00m, preferred 0.90x1.20m. The platform may also have a folding seat; in this case its width must be increased by the thickness of the seat. The lifting capacity of the system must be 250Kg. Entry-exit points must be provided with adequate space for approach and manoeuvre of a wheelchair, with minimal dimensions 1.50x1.50m.

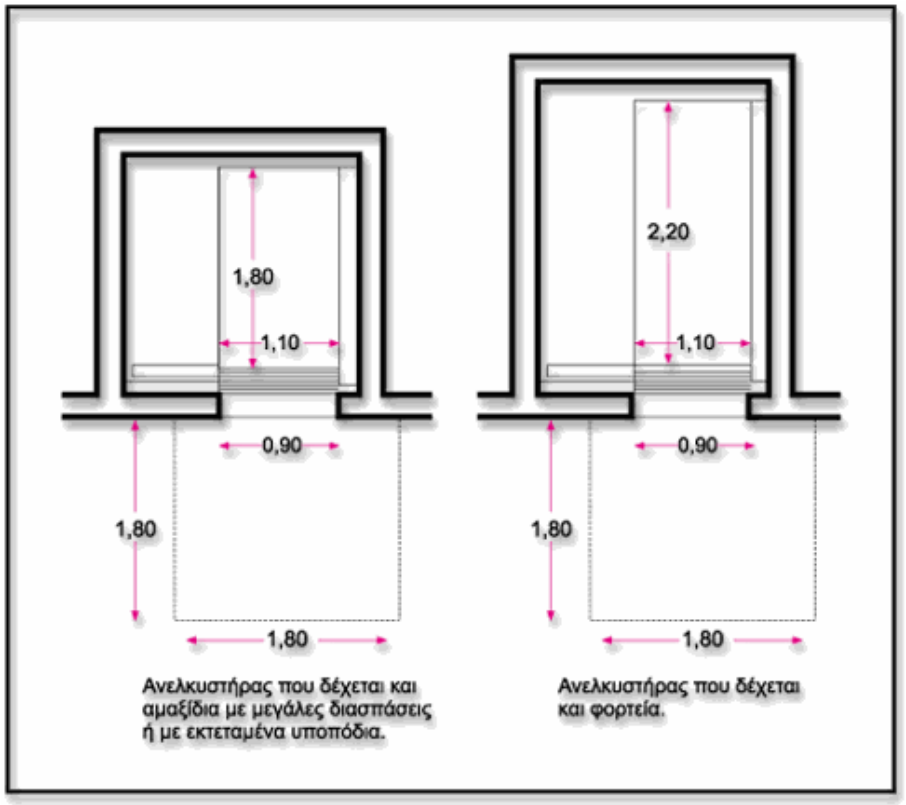


Figure 47: Lift dimensions for large wheelchairs and for stretchers

6.2.7 Signage

Signage is the set of symbols and texts that facilitate the orientation and movement of all people in structured environment. Signage is also considered any other means that facilitate safe movement and information, such as sound signals, material variations through colour and / or texture, drawings, patterns, etc.

Strategic points of public buildings must have a simplified floor plan with marked parking spaces, entrances, information desk, vertical circulation, sanitary spaces, points of interest, etc. The presence of proper signage is particularly important in case of emergency, for easily identifying escape routes.

Extensive texts and the combination of advertisement signs and information signage should be avoided since they cause confusion. Also, signs must be non-reflective (matte) and colour contrasting to the surrounding area.

The simple and clean design is important for good perception of the environment, including easily identifiable orientation points. The choice of materials can differentiate spaces and functions but and to improve their sound status.

The use of audio-visual and electronic signage should follow the same principles as the rest of the signage.

Figure 48: International Symbol of Access (white on black or blue)

Depending on its location and form, signage includes signs, floor mounted signs, audible or light signs, street furniture and building components (through colour and shape).

a) Signs

Signs should follow the international (ISO 3864/84E), European and national guidelines.

- Shape

Rectangular: information/ Triangular: warning/ Circular: ban

- Colour

Green: safe/ Yellow: danger/ Red: emergency situation

These colours refer to background colouring. Yellow is sometimes a sign of service and appears on information boards. White and blue are also used.

People with vision impairments identify more easily chromatic / tonal contrasts. If no other guideline is provided, it is best to use black lettering in white background.

There must also be a contrast between the sign and its background according to the following table:

Background	Sign	Text or/and Drawing
Dark Wall or Wall material (black, red, dark gray, green etc.)	White	Black or dark colour
Wall of light colour or material (beige, or light grey)	White	Black or dark colour
Wall white or too light (washed) coloured	Black or dark colour	White
Green leaves	White	Black or dark colour

- Position of signs

When placed in contact and parallel to the walls, signs must be at a height of 1.40m - 1.60m. When they indicate a service (e.g. WC, office, waiting area, etc.) should be placed next to and not on the door, on the side its handle is located. The same applies to the numbering of spaces.

When placed inside the buildings suspended from the ceiling or fixed vertically to the walls, their lower edge should be 2.20m. from the floor. Generally, the signs must be positioned so that they do not prevent movement and do not cause accidents.

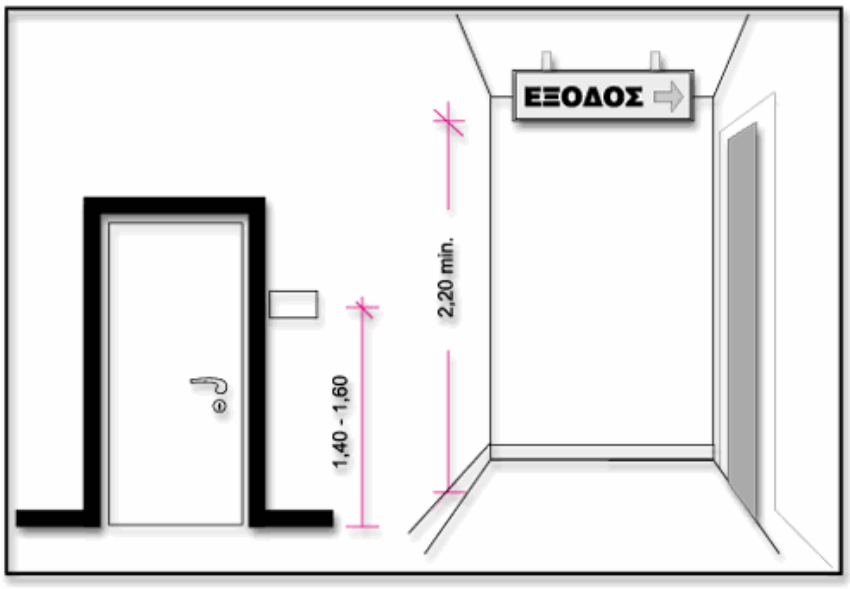


Figure 49: Signage examples

- Letters and symbols of signs

The text must be brief and comprehensible. The letters should be Helvetica Sans Serif, normal and medium, small and / or capitals (depending on the size of the text and the distance to from which they are read). The height of the letters must not be less than 15 mm. In outdoor signs the height of the letters must not be less than 100mm (3 meters distance reading). Generally, the size of letters and symbols is determined by the distance required for them to be readable and comprehensible.

6.2.8 Buildings entrances

Every building - used by the general public or not - should be accessible to people with disabilities, and more generally, to people with restricted mobility, from at least two entrances:

- the main entrance of the building;
- underground car parks.

a) Entrance doors

Entrance to the building must be made through an automatic sliding door (with photocells and speed of 0.50m / s) or a manual sliding door (the maximum force required to open the door should be 15 Newtons). Simple opening doors 1.20m wide can also be used.

Rotating doors should be avoided. In case these exist, opening doors, 1.20m wide, for service of disabled people should be installed next to them.

Common vestibules do not cause problems, provided their doors have proper dimensions and require force less than 15 Newtons to open. The inside of the vestibule should provide free space of 1,50m. diameter.

Entrances, if they are opaque, should have a vertical skylight allow the user to check movement behind the door and a D or L shaped handle.

Thresholds should be avoided, as well as any other element that protrudes or sinks to the floor more than 2cm.

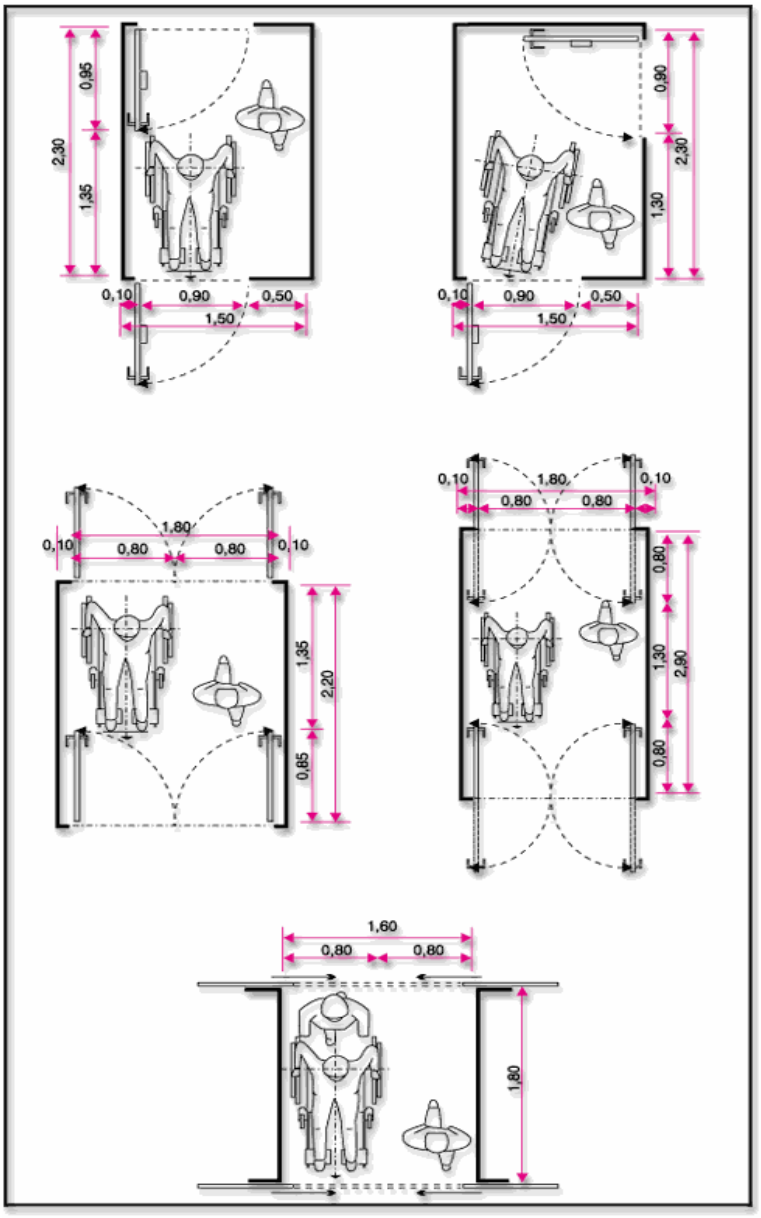


Figure 50: Vestibules

b) Door equipment

All equipment (door handle, lock, door bell, light switches, automatic door switch etc.) should be placed at a height of 0.90-1.20 m from the floor and always at the same side.

c) Signage

Doors and their frames should have strong colour contrast with the surrounding walls. Equally intense colour contrast should be provided between the door leaf and the handle.

In case of glass panels, signs, at a height of 1.40-1.60 m from the floor and in bright colours, should be placed to help people with vision problems.

Informative signs (number, hall use etc.) should be placed at a height of 1.50 m from the floor, always at the same side of the door leaf. All the information on them should be also displayed in Braille.

6.2.9 Public toilets

A prerequisite for considering a public building or a public space accessible, is a toilet properly configured with the necessary equipment to serve every category of users, including persons with restricted mobility.

"Sanitary areas" are facilities containing washbasins, urinals and W.Cs. Any building or outdoor space used by the public must provide, depending on the frequency of use, a certain number of sanitary facilities. Buildings must provide at least one sanitary space per floor designed for wheelchair users.

a) Public sanitary spaces for persons with restricted mobility

These spaces serve all categories of disabled people and also serve as "family-type" sanitary facilities, that is to say, for care of infants and young children accompanied by a parent. Must be placed in readily identifiable positions near the entrances and the vertical circulation areas. Inside the public sanitary facilities, free space for rotation, 1.50m in diameter must be provided.

- Signage

The existence of hygienic spaces for disabled persons should be marked correctly and clearly with the use of the International Symbol of Access (ISA) and the symbol "W.C.".

- Accessibility

Access to sanitary facilities must be level. If a height difference exists, this should be covered with ramps of 5% maximum inclination according to the "ramps" guidelines. The free width corridor or ramp must be 1.20m. - 1.30m

- Entrance

The door should be 0.90 m wide, opening towards the outside of the toilet or sliding. A maximum force of 15 Newtons should be required to open the door. The door handle should be of type α, β, or γ according to image. The locking mechanism of the door leaf must allow opening from the outside in case of emergency and also have an indication of occupation.

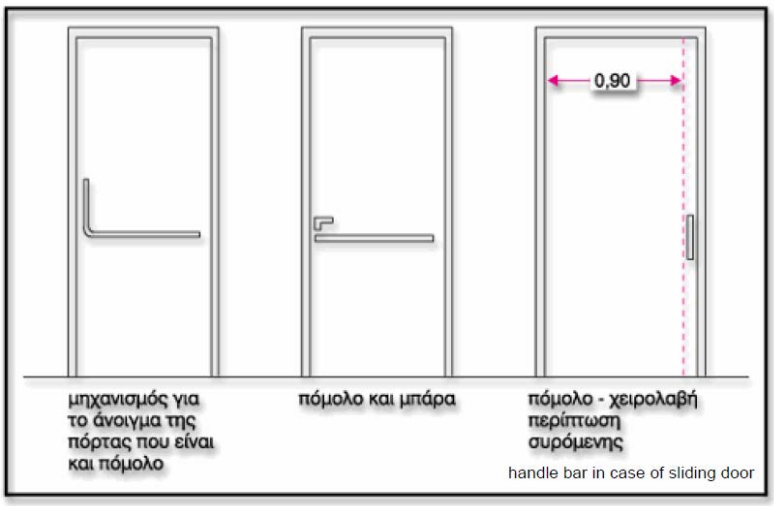


Figure 51: Door types

- Equipment
  - Washbasin

The height of the washbasin should be 0.85m. from the floor to the top of it and 0.70m from the floor to the bottom of it. It is accompanied by a shelf at the same height.

The 0.70m. free space under the washbasin must be secured in any case, and the drainage of the sink must not annoy a wheelchair user's knees.

The washbasin is placed next to the WC with its front end in line with the inner edge of the WC. The distance between the edge of the WC and the washbasin must be about 0.10m. and never exceed 0.25 m, so that the use of the washbasin by a person sitting at the WC can be possible.

Alternatively, in the case of existing buildings, if the above mentioned arrangement is not possible, the WC is placed in parallel with the washbasin (on the same wall) and the distance between them must be 0.25m. The sink installation should be specially designed so that it can withstand a vertical load of 100Kg.

The washbasin should have a mixer tap with lever-type controls (not spherical) and an extendable "shower" head. At cases of external, non - built - in water pipes, these must be insulated in order to avoid possible accidents or injuries.

- Mirror

The mirror is placed over the washbasin with a slight slope. The bottom of it should be at a height of 1.00m. from the floor and the top of it at 2.00m.

- Basin

In front of and next to one side of the WC, there must be enough space for frontal or lateral approach to a wheelchair. As mentioned above, the appropriate provision with regard to placing the WC and the sink is putting them in perpendicular walls. The height of the WC must be 0.45 m. to facilitate movement of wheelchair users. It must have a back of at least 0.30m. from the top surface of it. An easy to handle low pressure cistern (for example with a side handle) can act as a substitute for it.

Next to the WC is a slip resistant hinged rail of about 0.75m. with its upper part at a height of 0.70m. from the floor. The diameter of such a handle is 30mm. - 40 mm (about 1½).

Particular attention should be paid to the installation of handrails and equipment in order to withstand a vertical load of 100Kg. The toilet paper dispenser should be easy to reach.

- Emergency alarm

An emergency alarm cord should be provided. It should be installed parallel to the floor at a height of 0.15 – 0.20 above floor level.

- Floor

The floor should be slip resistant, non-reflective and easy to clean. Colour contrast between the floor, doors and equipment can assist users with reduced vision.

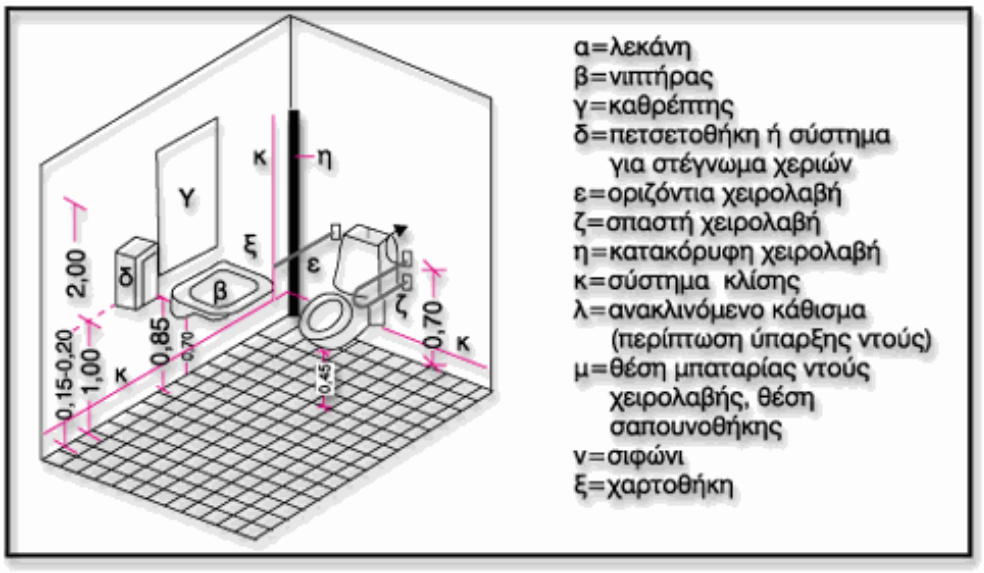


Figure 52: Equipment

α = WC, β = washbasin, γ = mirror, δ = hand dryer, ε = horizontal handrail, ζ = hinged handrail, η = vertical handrail, κ = alarm cord, λ = reclining seat (in case a shower is provided)

b) Public sanitary spaces with showers for persons with restricted mobility

In cases where use of showers is foreseen, care must be taken to ensure that the dimensions of the spaces are adequate so that a bench can be installed to serve the user, ensuring always free manoeuvring space of 1.50m in diameter.

At the shower area the creation of any curb or other height difference is prohibited. The shower area should be flush with the rest of the floor, smooth drainage of water should be ensured by the formation of slopes leading to a siphon.

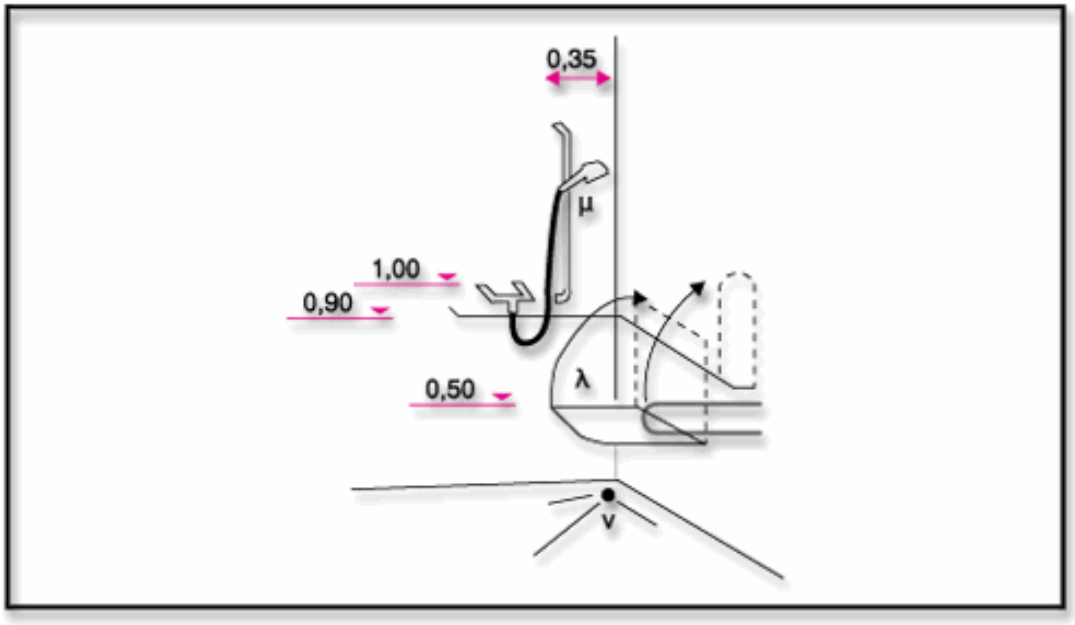


Figure 53: Design of shower

- Equipment
  - Seat

A foldable seat at a height of 0.50m. from the floor should be provided inside the shower.

- Handles

At the shower area suitable stainless steel handrails should provided, well anchored. These handles are placed horizontally and vertically at a height of 0.90m. from the floor. The maximum height for the top vertical handle is 1.80m. from the floor. The handles should be round and have a diameter of 30 mm. - 40 mm (about 1½).

- Adjustable height shower head

The user should be able to adjust the height of the shower head at a lower point height of 1.10m. from the floor and maximum height of 2.20m. from the floor.

- Soap tray

The soap bar is placed in an appropriate position at a height of 0.90 m. - 1.10m. from the floor. Handles must withstand a load of 100Kg.

- Floor

The flooring materials must ensure slip resistance, homogeneity, low reflectivity and ease of use, cleaning and maintenance.

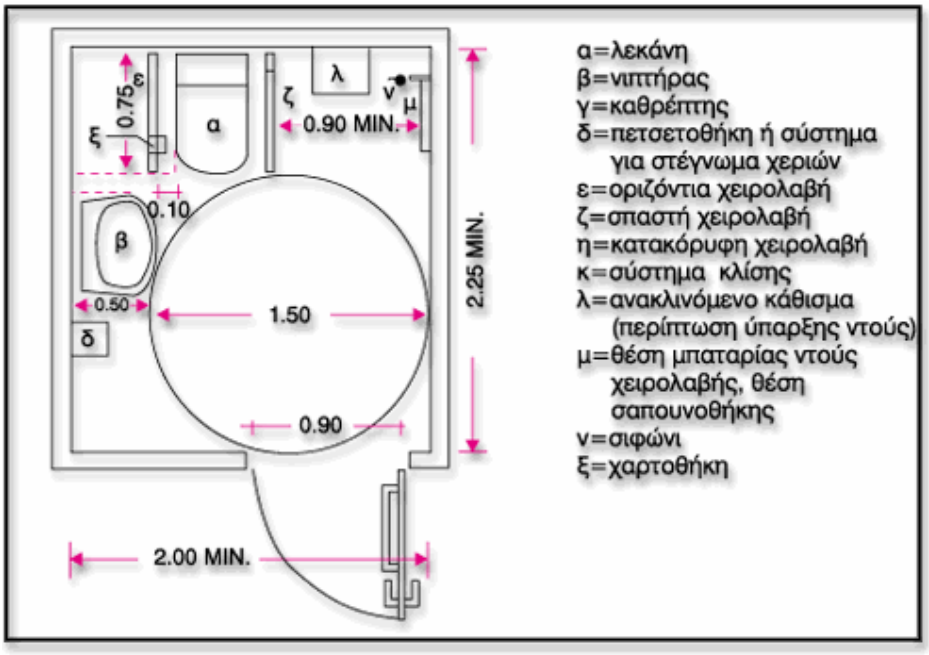


Figure 54: Equipment

α = WC, β = washbasin, γ = mirror, δ = hand dryer, ε = horizontal handrail, ζ = hinged handrail, η = vertical handrail, κ = alarm cord, λ = reclining seat (in case a shower is provided), μ = shower head position, ν = siphon, ξ = paper dispenser

6.2.10 Accessible examination rooms

An accessible examination room has features that allow patients with mobility impairments to receive healthcare. These include:

- Accessible route to and through the room
- Entry door with adequate width and accessible hardware
- Appropriate equipment
- Adequate floor space

Guidelines for widths and hardware of doors have already been introduced. As far as turning space is concerned, an individual with mobility impairment should be able to approach the exam table and all other elements of the room. Thus, the exam table should have sufficient clear floor space next to it so that a wheelchair user can approach the side of the table for transfer onto it. A clear space at least 80cm. wide and 1,2m. long should be available. Since some individuals can transfer only from one side, clear space on both sides should be provided. If that is not possible, a reverse layout in another examination room should be available.

The room should also have enough turning space for individuals using wheelchairs, that is clear space of 1,5m. diameter or a T-shaped 1,5 X 1,5m. Movable furniture should be set aside, if necessary. When a portable patient lift is used, additional clear space will be needed.