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DGS desde 1899
Direção-Geral da Saúde

Health by Numbers Portugal

2017 | Number 5

www.dgs.pt

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Datasheet

Health by Numbers Portugal

Directorate-General of Health Scientific Journal

ISSN 2182-7389

Alameda D. Afonso Henriques, 45 - 1049-005 Lisboa

Instructions to authors available at: www.dgs.pt

Contact for submission of manuscripts: revista@dgs.min-saude.pt

Editorial

Digital transformation

"The fabulous number five"… another five will come.

Our will to make more editions of this journal never wanes. If we could, we would not do anything else. But in fact, we must do everything else; and time and resources are scarce. But here is the fifth edition!

Knowing that limitations seem to be insurmountable and our will to do things (that is always greater), it is paramount to find the ways or means to bring the two things together.

The idea that made the most sense for us was to get aboard the current digital transformation trend.

Is it possible to move quickly from the researcher work to the publication? How can we streamline this process? It seems that the strategy includes the simplification of procedures and the use of modern technologies to move from data and words directly to the final publication. These ideas enlivened us and we set them in motion. That's why this issue of our journal has an unusual look, we believe that it is simplified and renovated.

We want the next editions to be even more uniform, with all the articles' elements made directly from the investigator's data without intermediate steps, programs, applications and any other tools.

In this issue, we have two articles about the elderly a key theme for all of us at DGS; an article about the human papilloma virus in the form of a public health intervention - we want more of this kind of articles; and, finally, a perspective about what were 10 years of experience of *Saúde 24* [Portuguese health call line] at DGS, the path that allowed the line to evolve into the current NHS Contact Centre - *SNS 24*!

We want to have more editions done, we want to have more issues per year … and we will!

Five are already here ... let another five come!

Paulo Jorge Nogueira

Articles

A. Incidence and characterization of falls in the elderly in the integrated care unit of Alijó

** Authors:** Alexandrina Lobo[1] | Nuno Silva[2] | Cláudia Teixeira[3]:

Institution: [1]Escola Superior de Enfermagem Dr. José Timóteo Montalvão Machado - Chaves | [2]Unidade de Cuidados de Saúde Personalizados do Peso da Régua | [3]Unidade de Cuidados Continuados de Alijó

Contact: Alexandrina Lobo | damiaolobo@gmail.com

Abstract [1]

The occurrence of falls is one of the most frequent causes of dependence and institutionalization of the elderly person(1). Despite all the existing knowledge about the factors that indicate the occurrence of falls, these remain a very frequent and therefore very worrying health problem, especially in the health units. Given the complexity of falls, it is critical to classify and describe them according to frequency, type of consequence and precipitating factors, in order to prevent and reduce their incidence. In the present study, we have proposed to describe the incidence of falls in the elderly of the Integrated Continuous Care Unit (UCCI) of Alij? between November 2008 and 2013 with regard to frequency, causes, circumstances and consequences. This study allowed us to catalog the occurrence of falls and allowed us to conclude, for example, that the incidence of falls in the institutionalized elderly is higher in men during the first month of institutionalization, in the morning shift, in the bathroom, resulting in some kind of physical consequence. Studies such as this provide important insights to increase the effectiveness of fall prevention programs.

Keywords: Elderly; Integrated Continuing Care Unit and Falls

1. Introduction

Human ageing is natural and progressive, characterized by structural and functional changes, which are associated with a greater predisposition for falls(1). This problem in the elderly is one of the most frequent causes of dependence and institutionalization(2), due to the significant increase in the number of elderly people. According to the World Health Organization (WHO)(3), falls are the second leading cause of death from accidental injury in the world. For Ribeiro(4), a fall is an accidental event that results in the change of position of the individual to a lower level, in relation to his initial position, determined by various circumstances, compromising the stability and the

[1]This article is part of a work developed and published in Moura, C. et al. (Coords.). Novos olhares na saúde. Chaves: Escola Superior José Timóteo Montalvão Machado, 2014.

function of the person. Your risk increases in the same proportion as the associated risk factors[5].

Falls continue to be a frequent and worrying health problem in health units.Nurses must take responsibility for their control and monitoring, including through rigorous and systematic risk-of-fall assessments and the promotion of appropriate interventions taking into account the preparation of recording facilities, the adequacy of fall protection equipment, the training of professionals, andthe association with cleaning services[6].

Falls can have physical, psychological and social consequences, being frequent in institutions, partly due to the insufficient allocation of nurses[7]. The habitual consumption of certain drugs may increase the risk of falls in the elderly[6], where the institutionalized elderly tend to require more medication than those who live in the community.There is also a greater number of chronic pathologies, greater weakness and physical and mental incapacity[1]. It is thought that, for these reasons, the falls of the institutionalized elderly are more serious and have greater consequences[8].

A National Network for Integrated Continuous Care Portugal (RNCCI), created in Portugal, aims to provide health care and social support to people in situations of dependency, intervening holistically in their rehabilitation, contributing to the maintenance and improvement of their functional capacity[9] it takes into account the international recommendations [3,12] of prioritization of research related to this problem, effective establishment of policies to reduce the risk of falling and the bid for the creation of safe environments for patients. This study aims to contribute to health gains adapted to this population, namely the reduction of the occurrence of falls and reduction of the physical and psychological consequences thereof. For this purpose, the following aims were defined: to analyze the incidence of falls in the elderly of the UCCI of Alijó; characterize the elderly and falls.

2. Methods

In this study, a retrospective and exploratory-descriptive method was used, with a quantitative approach, in order to obtain data that, after being adequately analyzed, subsidized notable indicators, namely incidence and characterization of falls to contribute to the creation of interventions in nursing. In view of the small size of the target population and of the accessible population in a care unit of this type, such as that chosen for research, it was decided to study all accessible population and no sampling was carried out. We thus had 57 falls records, resulting from situations that occurred in 44 of the 388 patients hospitalized between November 2008 and November 2013 at the UICI in Alij?, and data were collected during the months of December 2013 and January 2014. For the collection of information, the records of falls and respective clinical processes (in paper support and digital support - **gestcare?**) of the elderly were consulted, considering for this purpose the data recorded in the assessments prior to the first fall, performed by the professionals of the unit. This study included the variables of gender, age, schooling, number of cohabitants, body mass index, personal medical history, medication in use, as well as information regarding the description of the fall (date, time, location, architectural barriers, floor, presence of health professionals, fall occurrence and physical consequences), seeking all the variables that can be extracted from the in-

formation of each patient related to risk factors for intrinsic and extrinsic falls. This study complied with the principles set out in the 1975 Helsinki Declaration of the World Medical Association, revised in 2004, and all methods and procedures were approved by the Ethics Committee for Health of the Northern Regional Health Administration. We attempted to evaluate the various dimensions that contribute to the increase in the occurrence of falls. We used evaluations performed by the multidisciplinary team of the care unit, during the period of hospitalization of the patient. We examined the evaluations carried out on the days immediately before the occurrence of each fall, as close as possible to it, considering the following measures:

Assessment of the level of consciousness: As one of the most objective ways of assessing a person's level of consciousness, the Glasgow Coma Scale appears. This is a neurological scale that allows the examiner to classify the patient's three main responses to the environment in which he is inserted: ocular opening, verbal response and motor response. The maximum total score for a fully conscious person is 15, the minimum being 3[10].

Fall risk assessment: Since was not found a publication on the translation, adaptation and validation of the portuguese scale, and no portuguese version was published in the last publication of the author[6], the author was contacted and has given authorization to use the scale. He also sent recommendations for its use, which were followed in the investigation. This scale measures the level of risk of falling, in order to adopt strategies for the prevention of falls. To measure the scores, 6 items are used: a history of fall; secondary diagnosis; support for ambulation; medication and/or intravenous heparin; gait; mental state. The scores obtained can then be classified into three different levels: low risk (score lower than 25); Medium risk (scores between 25 and 51); high risk (score greater than 51).

Evaluation of the degree of dependence: The Barthel index, is one of the tools for evaluating daily life activities[9]. This index affects functional dependence in patients with a chronic pathology, aiming to evaluate whether or not the patient is able to perform certain tasks autonomously. The scale consists of 10 items: nourishment, transfers, neatness, use of the bathroom, bathing, mobility, use of stairs, dressing/undressing, bladder control and intestinal control. Its total can vary from 0 to 100, with a total of 0-20 indicating total dependence; 21-60 severe dependence; 61-90 moderate dependence; 91-99 slight dependence and 100 independence. The data obtained were coded and analyzed using the Statistical Package for the Social Sciences (SPSS) version 17 for Windows (SPSS Inc., Chicago, IL, USA). The significance level was set at 5%. Descriptive and inferential statistics were used, namely: Spearman's correlation coefficient to describe the degree of relationship and/or association between some of the variables considered. We used non-parametric tests such as Mann-Whitney and Kruskal-Wallis to compare the means between independent samples of ordinal variables composed of 2 groups and 3 or more, respectively.

3. Results

In this study with 44 institutionalized subjects (27 men and 17 women), an average age of 73.6 +/- 9.6 years was observed; 47.7% (n = 21) are mar-

ried, 27.3% (n = 12) are widowed and 22.7% (n = 10) are single. The majority have primary education (59.1%, n = 26), live in rural areas (88.6%, n = 39), cohabit with another person (45.5%, n = 20) and 31.8 % (N = 14) lives alone. Regarding the characterization of the motif underlying the patient's referral, it was observed that 40.9% (n = 18) was due to ischemic stroke, 13.6% (n = 6) due to hemorrhagic stroke, matching the majority with individuals hospitalized in the Unit of Medium Duration and Rehabilitation (UMDR), corresponding to a total of 75% (n = 33) of the cases under study. In parallel, it can be observed that the 11 hospitalized elderly patients who suffered falls in the Long-Term and Maintenance Unit (ULDM), are mostly referred due to pressure ulcers (11.4%; n = 5). A percentage of 84% (n = 37) of subjects from the hospital is still present, namely 22 subjects from stroke units. Table 1 shows that although there are no statistically significant differences, women have a higher level of consciousness, greater dependence, lower risk of falls and higher BMI. It is observed that subjects with less than one month of hospitalization time, in the unit to which this study reports, until the episode of the fall, are also shown with greater dependence and lower risk of falls; In contrast, have a worser level of conciousness and have less weight.

Table 1: *Sample charactristics by gnder and institutionalization time*

	Female	**Male**	**Institutionalized under 1 month**	**Institutionalized over 1 month**
Glasgow Scale	14,4+/-0,7	14,1+/-1,0	14,1+/-0,8	14,3+/-1,0
Barthel Index	31,8+/-24,9	41,7+/-25,3	33+/-21,0	42,7+/-28,7
Morse Scale	43,5+/-16,0	49,8+/-20,1	45,7+/-17,5	49,1+/-20,0
BMI	24,3+/-5,3	23,2+/-3,4	23,0+/-4,2	24,4+/-4,4

Examining the medication used by the study subjects, 54.5% used antihypertensive agents, 40.9% used anxiolytics, 20.5 antidepressants and 22.7% depended on hypoglycemic agents; Evidencing that 86.4% (n = 38) requires the use of two or more of these drugs. As shown in the table on the percentage of cases of changes in variables associated with falls, it is observed that women, and in general all the elderly in the first month of hospitalization, present fewer visual and auditory problems, but greater use of anti-hypertensives and changes in mobility.

Table 2: *Distribution of changes in variables associated with falls by gender and length of institutionalization (%)*

Changes	**Female**	**Male**	**Institutionalized under 1 month**	**Institutionalized over 1 month**
Visual perceptiveness	23,5	29,6	22,7	31,8
Hearing perceptiveness	11,8	18,5	4,5	27,3
Sleep and rest	23,5	40,7	36,4	31,8
Mobility/locomotion	88,2	85,1	95,5	77,3
Use of anti-hypertensives	70,6	44,4	68,2	40,9

Considering the characterization of falls, 47.4% (n = 27) occurred in the morning, 43.9% (n = 25) during the afternoon, 33.3% (n = 19) occurred in the bathroom, 28.1% (n = 16) in the cafeteria and 24.6% (n = 14) in the infirmary. It was observed that 50% (n = 22) occurred in the morning, 43.2% (n = 19) during the afternoon, 34.1% (n = 15) occurred in the bathroom 27.3% (n = 12) in the cafeteria and 25% (n = 11) in the infirmary. The majority (73.7%, n = 42) of the falls were not attended by health professionals, 10 subjects had more than one fall during hospitalization, and nine cases required urgent care. In addition, 12.3% (n = 7) of the falls occurred in wet conditions, 50.9% (n = 29) had physical consequences, namely: 26.3% (n = 15) hematomas and 14% (n = 8) of wounds. As shown in table 3, regardless of gender and time of institutionalization, it is observed that most of the elderly in the study, present an average risk of falls.

Table 3: *Distribution of fall risk classification by gender and time of institutionalization (%)*

Risk of fall	Female	Male	Institutionalized under 1 month	Institutionalized over 1 month
Low risk	5,9	7,4	9,1	4,5
Medium risk	52,9	51,9	50	54,5
High risk	41,2	40,7	40,9	40,9

In search of the association between some variables in study, table 4 is presented, in which it is observed that there is a negative and significant association between age and level of consciousness; On the other hand, there is a positive relationship between the level of dependence and consciousness.

Table 4: *Analysis of the correlations between variables*

	Number of falls	Age	Glasgow Scale
Glasgow Scale	-0,107	-0,335*	1
Barthel Index	-0,199	-0,134	0,331*
Morse Scale	0,198	0,062	-0,175
BMI	-0,175	-0,133	0,153

4. Discussion

All records of falls recorded at the UCCI of Alijó between November 2008 and November 2013 were considered, corresponding to a total of 181 patients admitted to the Medium Duration and Rehabilitation Unit and to 207 patients hospitalized at the Long-Term and Maintenance Unit. In our study, there was a cumulative incidence of falls of 57 cases in 388 elderly (14.7%), where 22.8% (13/57) corresponded to recurrent falls. According to the WHO[12], 30 to 50% of people living in institutions suffer from falls, of which 40% are cases of repetition. It is observed that men present a higher risk of falls, Lobo et al.[13] found that older men who have been institutionalized for a longer period of time have been impaired in their functional mobility, due in large part to the lack of opportu-

nities and/or capacity to carry out their daily life activities. Other studies show that already on the second day of hospitalization there is a significant deterioration of functional capacity, due to several factors[14,15]. The Morse[6] assessment of the risk of fall can identify changes that affect the health condition, which is a support for the definition of preventive measures, and should be considered a high-risk classification with a score higher than 45. The data were coded taking into account the categorization of the digital-gestcare[R] application, with 52% presenting medium risk and 41% high risk. Considering the recently recommended cut-off point, it is observed that a significant rate of cases are underestimated (36% and 57%, respectively). In his systematic review of the literature on fall risk factors and risk assessment instruments, Oliver et al.[16] concluded that there are few instruments validated and that there are limited predictive capacity, which supports the need to combine specific measures and indicators for each person. Among the factors that affect this classification are the subjectivity in the medication score and the secondary diagnosis, which are interrelated even with other variables, mainly gait and mental state. It was observed that 86.4% of the elderly in the study used two or more drugs than those indicated as fall enhancers, and it is worth noting that the drug interaction is more pronounced in the elderly[17]. Most of the elderly studied use antihypertensive medication, which can potentiate the occurrence of falls due to eventual postural hypotension resulting therefrom[18,19]. The majority of falls (73.7%) were not attended by health professionals and 10 elderly people had more than one fall during hospitalization, which averaged 103 and 529 days in the Medium Duration and Rehabilitation Unit and in the Long Duration and Retention Unit, respectively. Taking into account the characteristics of the context under study, and since it is noted that the falls were not associated with the existence of architectural barriers, aspects relating to wet conditions, especially in the bathroom, during the morning, as evidenced in other studies[20]. The consequences of falls in hospitalized subjects tend to be more severe than those found when inserted in the community, being fatal in about 20% of the cases, which, at least in part, justifies the recording of 4 deaths among the subjects under study[14]. In this study, it was found that 51% had injuries directly caused by trauma, which is compatible with what has been found in other studies.[20] The consequences of a psychological nature, which relate to the fear of falling again, anxiety, depression and loss of self-esteem and social costs related to increased costs with human and technical resources, were not assessed, partly due to the increase of hospitalization time, but also due to the reduction of their autonomy.[16,21] Rubenstein[14] states that in 7% of falls, the elderly were limited to perform daily life activities and no longer perform routine activities. It is noted that the level of consciousness worsens with age and is positively associated with the level of dependence. It can be emphasized that deterioration of the level of consciousness associated with age interferes with independence, without being able to correlate other variables, perhaps due to the small sample size. Given the retrospective nature of this work, it is suggested that other longitudinal studies can be carried out with multiprofessional teams duly qualified for this purpose, including yet other variables.

5. Conclusions

According to our results it is observed that the incidence of falls in the institutionalized elderly is higher in men during the first month of institutionalization, in the morning shift, in the bathroom, resulting in some kind of physical consequences, bruises and wounds. The data from this research provide important indications for the creation of strategies in fall prevention programs, which will include, among others, correcting Morse scale cutoff points, conducting a systematic review of patient medication, addressing treatment of correctable visual deficiency, better control of the floor conditions of health facilities, paying special attention to sleep and rest alterations, attending mobility/locomotion alterations, with special focus on the prescription of adequate technical aids to each patients and their physical and sensorial alterations. Looking for relevance to the promotion of patient safety, as well as the prevention of incidents, of which falls are the most reported, it is justified to create multidisciplinary interventions to achieve better care.

6. Declaration of conflict of interests:

The author declares any potential conflicts of interest in regard to the research, the authorship and/or publication of this article.

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B. The elderly, dependence and accessibility to health care

Authors: Alexandrina Lobo | Ana Ribeiro | Carlos Neves | Graça Ramos | João Gomes | Paula Jesus

Institution: Escola Superior de Enfermagem Dr. José Timóteo Montalvão Machado - Chaves

Contact: Alexandrina Lobo | damiaolobo@gmail.com

1. Abstract[2]

Accessibility to health care should guarantee the necessary monitoring and improvement of health, thus we aimed to evaluate the relationship between the level of dependence and accessibility to the health centre by elderly people with nursing care at home. A transversal and correlational-descriptive study, with an intentional sample size of 77 elderly persons from the geographical area of ACES Alto Trás-os-Montes II, with nursing care at home. A questionnaire was applied by the investigator, in which included: the evaluation of socio-economic data, the accessibility and level of dependence through the Lawton and Brody Index. The majority of subjects consider not having difficulty in getting to the health centre and are satisfied with its location; 58.4% mention spending from 5 to 10 euros in transport to the health centre, 51.9% spend from 15 to 30 minutes and 46.8% use their own transportation. It is evident that the biggest dependency of the elderly hangs on nursing care at home. The location of the health centre correlates positively and significantly with the dimensions of personal care, communication and social relationships. It also verifies a positive association between age and duration of transportation.Given the existing relation between dependency and the accessibility to health care, care should be taken to develop effective strategies that promote physical, psychological and social independence, in order to fairness of care, particularly to elderly people with dependency.

Keywords: Accessibility to health care e Dependency

Introduction

It was mainly from the second half of the twentieth century that a new phenomenon in developed societies emerged: the demographic ageing. The technological progress in medicine and, in general, the improvement of socio-economic conditions, contributed to the increase of longevity, which therefore, increases significantly the number of people with chronic diseases in a state of dependency[(1)]. The loss of autonomy can have consequences in the survival of elderly people, therefore it is important to focus on improving their accessibility to health care, given their implications on the health-disease process, particularly for the elderly with functional dependency[(2)].

Accessibility is considered as one of the essential attributes in achieving quality in health service. It is assumed to be a complex concept, which covers

[2]This article is part of a work developed and published in Moura, C. et al. (Coords.). Novos olhares na saúde. Chaves: Escola Superior José Timóteo Montalvão Machado, 2014.

several areas, being able to be characterised by the possibility of enjoying health care, that at the moment is considered necessary, in the most convenient and favourable conditions[3]. It is related mainly, with the economic aspects, the health services on offered and the physical capability to accessing them, so as to provide, in a timely manner, technical and scientific care to ensure that the condition of the patient is improved and that a prompt and efficient response is assured, so as to provide the necessary follow-up until its complete restoration[4].

According to Furtado and Pereira[5] accessibility cannot be seen solely in the sense of offer/availability of health care, but other conditions must also be considered; so to speak eventual barriers that may limit the citizen to its health potential, namely: geographic; demographic; economic; social cultural and level of dependency. In spite of accessibility being consigned in national health policies, on the basis of rights and guarantees consigned in the Constitution of the Portuguese Republic (Law n. 56/79)[6], as displayed in the Strategies for Health Report[7] it is found that there exists flaws and that yet no co-ordinated strategies have been developed that preconceive those rights. Therefore, the study of this problem at the locoregional level is justified by the need to evaluate the adequacy of specific strategies to minimize or eliminate eventual inequalities or asymmetries in access to health care.

Lima-Costa *et al*.[8] exposes that the performance in activities is substantially affected by the degree of dependency as a result of motor and cognitive conditions, emerging as an important component in evaluating the accessibility to health care in the elderly population.

Many times, dependency is associated with frailty, and assumed as a vulnerability that the a person shows in regards to the challenges of the context in which he/she is inserted. This term has been applied to elderly people, in regard to their tendency to develop disabilities (handicaps, limitations in performing activities and restraints in social participation) or to elderly people with unfavourable social conditions and that have less access to opportunities of reaching satisfactory levels of health and independence[9].

Various studies have analysed the question of dependency related to ageing and the needs of families, in which flaws in evaluating the determinants of their accessibility to health care still prevail. Thus, this study proposes to contribute with data that instigates equality to access and on the other hand the maximization of its health potential. The following goals have been defined:

- Characterize the accessibility and the levels of dependency of elderly people with nursing care at home;

- Verify if there exists a relationship between the different levels of dependency and the accessibility of these patients to primary health care.

The relevance of studying the relationship between accessibility and the level of autonomy of elderly people with nursing care at home is justified by the high levels of dependency in the ageing population, poor road network and low population density of the northern interior of the country.

2. Methods

As for the design of the investigation, a descriptive-correlational study was performed, insofar as it is intended, not only to describe the phenomenon, but also to examine the associations between variables or differences between groups. We opted for an inscriptive approach to a quantitative paradigm. As for temporality, it is classified as transversal, taking into account that the transversal study consists in examining simultaneously one or various cohorts of the population or one or various groups of individuals, at a determined time, in relation to a present phenomenon at the time of the investigation, such as referred by Fortin et al. (2009)[10].

For this purpose, the sample was intentional consisting of 77 elderly people with nursing care at home, between January and March of 2012. The included criteria were:

- Need of nursing care at home;
- Residence in geographical area covered by ACES Alto Trás-os-Montes II for at least 9 months per year;
- Being able to evaluate and respond to the questions asked.

In the data collection, the data was collected at the homes of the subjects in question, by means of questionnaire applied by the investigator. Socio-economic, demographic and cultural data was evaluated, (age, sex, marital status, educational qualifications professional experience, monthly income). In the accessibility analysis, the type of transportation used, time taken, costs of travel towards the health centre (HC), opinion of travel difficulties, localization, conditions of access for the disabled, and the parking provided, were taken into consideration. As for evaluating the daily life activities (DLA), the Lawton e Brody index was applied[11], and validated to the portuguese population by Ara?jo *et a*l. (2008)[12] . This exposes 7 dimensions with various items: personal care (feeding, clothing, bathing, elimination, medication, interest towards personal appearance); domestic care (cooking, laying the table, domestic chores, domestic repairs, laundry); work and recreation (work, recreation, organizations, trips); shopping and money (buying food, using money, managing money); locomotion (public transport, driving, neighbourhood mobility, exploring); communication (use of telephone, conversation, comprehension, reading, writing) and social relationships (family relationships, relationships with children, friends). The authority to perform this study was requested and granted, Parecer n.49/2012 of ARS Norte. The subjects studied that accepted to participate in the investigation and signed an informed consent, free and clear, understood that it would be a voluntary participation, with a confidentiality guarantee and anonymity of data. The data obtained from the questionnaires were submitted for statistical evaluation, through the Statistical Package for the Social Sciences programme (SPSS)[R], version 20.0. We proceeded to the distribution of absolute and relative frequencies to all the quantitative variables, of mean and standard deviation. We resorted yet to inferential statistics, applying the Pearson?s correlation to the study of the association between the different variables. We consider the existence of significant statistical differences when $p < 0.05$.

3. Results

The subjects of this study (n=77) had a mean age of 71.1?8.8 years (minimum of 65 and maximum of 89 years). As can be seen in table 1, the majority of the sampled subjects are female (n=49; 63.6%), married (n=49; 63.6%), followed by widowed (n=26; 33.8%). As for academic qualifications, 55.8% (n=43) of subjects attended primary school and 24.6% (n=19) had no schooling at all. As far as professional activities are concerned, the retired are the most common class, with 87% (n=67) of the subjects, and of those who are not, 54.5% belong to the primary sector. The majority of the sampled subjects (53.2%; n=41) disclose having a monthly income of 200 to 450 euros.

Table 1: *Socio-demographic characterization of participants*

	n	fr
Female	49	63,6
Male	28	36,4
Social status	n	fr (%)
Married	49	63,6
Widowed	26	33,8
Single	2	2,6
Schooling	n	fr (%)
None	19	24,6
Primary	43	55,8
Secondary	10	13
12th grade	5	6,6
Profession	n	fr (%)
Retired	67	87
Unemployed	5	6,5
Home	4	5,2
Worker	1	1,3
Professional	n	fr (%)
Primary sector	42	54,5
Secondary sector	14	18,2
Tertiary sector	16	20,8
Monthly income	n	fr (%)
Below 200 euros	9	11,7
200-450 euros	41	53,2
451-1000 euros	14	18,2
Over 1000 euros	13	16,9

With regard to the accessibility of primary health care in the sample characterization (table 2), we can see that 46.8% (n=36) of subjects make their way to the HC in a personal vehicle and 28.6% (n=22) in a family member's vehicle, in which 51.9% (n=40) take between 15 to 30 minutes to arrive at the HC and 33.8% (n=26) take less than 15 minutes. As for money spent in transport towards the HC, 58.4% (n=45) disclose spending between 5 to 10 euros and 32.5% (n=25) state spending less than 5 euros. Regarding the difficulties felt in transport towards the HC, 70.1% (n=54) say that they do not have any. When asked for an opinion regarding the journey towards the HC, the majority are satisfied (45.5%, n=35) and 33.7% (n=16) are a little satisfied. In regards to the accessibility for the physically disabled, 45.5% (n=35) consider it to be good and 44.2% (n=34) consider it to be satisfactory. 53.2% (n=41) of subjects characterize the parking facilities as satisfactory and 24.7% (n=19) as bad.

In regard to the results obtained on the level of dependency (figure 1), we can see that 60% of the sampled subjects are independent in the personal care dimension; contrary to the nursing at home, where only 35% of the subjects are independent and around 40% are dependent. In relation to work and recreation, approximately 50% are independent. In the shopping and money dimension, around 40% are independent and over 30% require help. The majority of the subjects (65%) are independent in locomotion and in communication (68%). As for social relationships, about 55% are independent and around 30% need help.

Figure 1: *Results of the level of dependency of subjects*

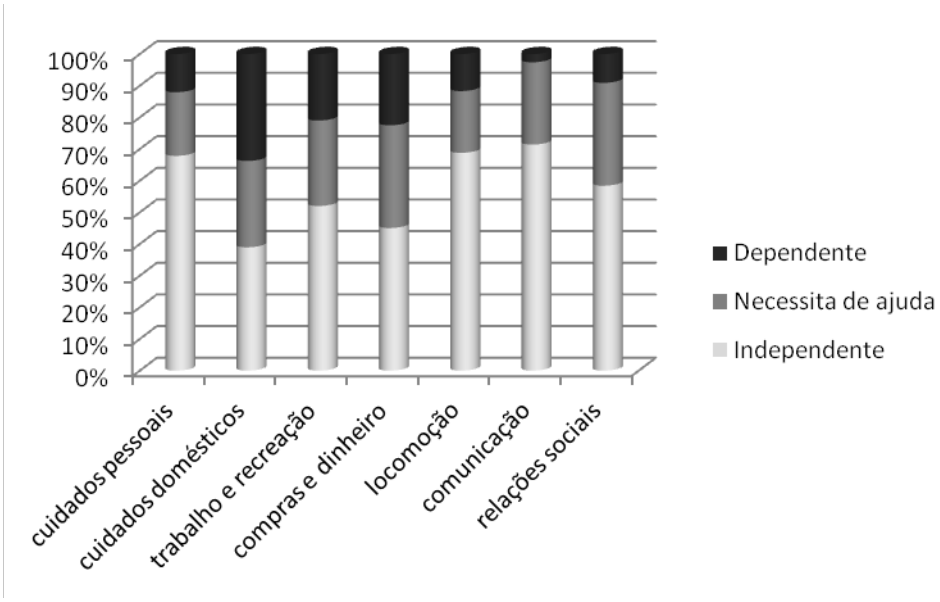

Table 2: *Characterization of accessibility to primary health care.*

	n	fr
Personal vehicle	36	46,8
Public transport	10	13
Family vehicle	22	28,6
Ambulance	2	2,6
On foot	7	9,1
Duration of journey	n	Fr (%)
Under 15 minutes	26	33,8
15-30 minutes	40	51,9
Over 30 minutes	11	14,3
Travel costs	n	Fr (%)
Under 5 euros	25	32,5
5-10 euros	45	58,4
Over 10 euros	7	9,1
Difficulties in transport	n	Fr (%)
Yes	23	29,9
No	54	70,1
Localization of the HC	n	Fr (%)
Very satisfied	26	33,7
Satisfied	35	45,5
Little satisfied	16	20,8
Accessibility for the disabled	n	Fr (%)
Good	35	45,5
Satisfactory	34	44,2
Bad	8	10,3
Parking facilities	n	Fr (%)
Good	17	22,1
Satisfactory	41	53,2
Bad	19	24,7

Through the Pearson's correlation co-efficiency (table 3), we can verify that the time of journey correlates positively and significantly with age. The opinion on the HC's location also associates positively and significantly with the dimensions of personal care, communication and social relationships. On the other hand, the opinion on the accessibility for the disabled presents a positive and significant correlation with the social relationships dimension, and the opinion on parking facilities with personal care.

Table 3: *Analysis of the relationship between the accessibility and level of dependency variables*

	Personal care	Communication	Social relationships	Age
Duration of journey	0.22	0.20	0.16	0.30**
Travel costs	0.22	0.11	0.18	0.05
Localization of the HC	0.27*	0.32**	0.33**	0.03
Access for the disabled	0.20	0.22	0.24*	-0.08
Resourses estacionamento	0.21*	-0.03	0.08	-0.09

- Statistically significant differences at p< 0.05 ** Statistically significant differences at p< 0.0011**

Discussion and conclusions

The rise in the levels of dependency in the population leads to an increase in the frequency of the use of health services, which has implications on their accessibility, particularly for elderly patients who need nursing care at home[12].

In this investigation, the majority of the studied subjects are satisfied with the localization of the HC, consider not having difficulties in making their way to the HC and rely on their own vehicles requiring 15 to 30 minutes with average costs between 5 and 10 euros. It is evident that the majority of subjects are independent for DLA, existing within the surveyed, a higher percentage of dependents in the domestic care item.

As far as socio-demographic characteristics are concerned, we highlight that older subjects present a higher dependency, particularly in the female gender, just as already described in other studies with the goal of exploring ageing and dependency in the home context[13,14]. Lopes[14] highlights a greater predominance of dependent elderly people in the female gender at the highest age range, which agrees on the fact that women present higher morbidity and longevity.

Our results corroborate the one referred by Martin et al[15], in the context of the profile of the peoples?needs in the ageing process in the municipality of Guimar?es. These authors identified that the group of people aged above 75 years present a higher dependency for DLA: exposing that 36,5% of elderly people need their meals to be prepared; 42,3% do not participate in any of domestic chores and 43,1% are unable of washing their clothes.

The rise in age associates itself with an increase in the prevalence of diseases which cause dependency generating excess costs with health. Some authors[13,16] report that elderly people that live at home, tend to refer to greater difficulties and costs in meeting their needs and assistance. This aspect is raised in the studied subjects, considering their referred monthly incomes. Moreover, Furtado and Pereira[5] add that the socio-economic characteristics of the individuals condition their exposure of situations that could compromise the state of health, reflecting on the styles and seeking/access to health care. It is highlighted that the low level of schooling of the subjects in study, just as mentioned by Remoaldo[17], could condition the communication with the professionals, reflecting on the accessibility and the use of health care.

The majority of subjects in this study refer to not feeling those difficulties, which could in some way, be confirmed by the means of transport used and by the resources spent in travel (time and money).

According to Remoaldo[17], the time spent in travelling to the HC constitutes an indicator of geographic accessibility that assumes a decisive role in the use of the health services. The developed study by the author revealed journey time below 30 minutes, just as those in the present study, which according to this author, is in consonance with the norms of the Health Ministry[6,7].

It is acknowledged that the higher the level of independence in personal care, communication and social relationships, the higher the satisfaction with the HC's localization. In part seems to be a resultant of the fact that independence entails fewer constraints in access. Therefore, to maintain and/or increase the level of independence of elderly people, conditions should be created to keep them in the home context, guaranteeing their autonomy and self-esteem[7].

The association between the accessibility for elderly people with different levels of dependency and social relationships, could be justified taking into account that autonomy regarding social relationships permits those individuals to maintain the capability to evaluate and perceive problems related to citizenship. To include everyone, society should be modified, and should confirm the socialization in the context of human diversity, as well as accept and value the contribution of everybody according to their personal conditions. Given the existing relationship between the level of independence of elderly people and their accessibility to the HC, investment should be made in the implementation of strategies that aim for the inclusion and the improvement of attending and offer in health care for these people.

4. Declaration of conflict of interests:

The author declares any potential conflicts of interest in regard to the research, the authorship and/or publication of this article.

5. Financing:

This research is associated to the financed project by the Ministry of Health/INSA, IP (2011EXT456 reference).

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Public health intervention

C. Human papilloma virus

Authors: Maria de Lourdes Varandas da Costa | Dina Maria Pinto

Institution: Escola Superior de Enfermagem de Lisboa

Contact: Maria de Lourdes Varandas da Costa | lcosta@esel.pt

Abstract

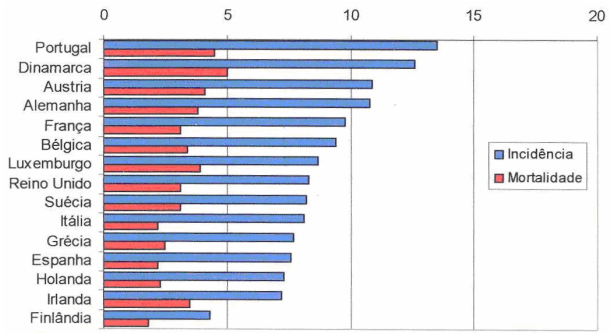
Cervical cancer is the second most common cancer in women worldwide, contributing to their occurrence the infection by the Human Papilloma Virus (HPV). This can be prevented by immunization strategies like the vaccine. The community intervention project carried out in an ACES of Lisbon with 37 adolescents, aimed to reduce by 80% the number of young women who have the inclusion criteria, of the 1993 and 1994 cohort, registered in an UCSP, and who did not get the HPV vaccine. As methodology, we followed the Planning Process in Health and as a guiding theoretical framework, the Self-Care Theory of Dorothea Orem. To identify the causes of non-adherence to vaccination we conducted a questionnaire. The data revealed that this is a population with knowledge deficits related to HPV and the cervical cancer. we prioritized the problems through the analysis grid. Intervention stood in primary prevention, with a strategy of health education, providing access to information and to knowledge acquisition, in order to empower teens to develop self-care strategies related to HPV. We believe that vaccination is a self-care strategy for sharing the assumptions of Self-Care Theory:it is intended that the individual acquires a behavior that contributes to the maintenance of life, health and well-being. The results arising from the activities performed can be analyzed through the process and result indicators. The process was evaluated by the activity indicator and so we planned and held individual educational activities, obtaining a result of 94.6%. We obtained an adherence to vaccination for the administration of the 1st dose of 86% and for the administration of the 2nd dose, 94.6%. As for the result indicator, it will be evaluated in a medium and long term because we consider that this intervention contributes to a reduction in the incidence of HPV and its consequences and that can bring gains in health and years of quality of life. We consider the nurse as a mediator who helps the individual to be able to self-care, thereby improving his/her quality of life and in this sense, helps adolescents to adopt self-care behaviors.

Keywords: Human Papilloma Virus; Vaccination; Cervical Cancer; Health Planning and Self-Care

1. Thematic framework

Cervical cancer is the second most common cancer affecting women aged between 15 and 44 years in the EU, and there are about 33 000 cases and 15 000 deaths (Graphic 1). The main cause is the persistent infection of the genital tract by a high-risk HPV[1]. According to the National Plan for Prevention and Control of Oncological Diseases (PNPCDO), oncological diseases are the *second leading cause of death in Portugal and have a profound impact on patients, in family and in society in general, being probably one of the most dreaded diseases by the population*[2].

Figure 1: *Mortality and incidence rates (per 100,000 population) in 2002 for malignant cervical tumor in Europe, standardized for age.*



Source: Direção-Geral da Saúde (2008, p.5) Disponível em http://https://www.dgs.pt/documentos-e-publicacoes/vacinacao-contra-infeccoes-por-virus-do-papiloma-humano-hpv.aspx

We supported the thematic based on the theoretical nursing of Dorothea Orem[3]. She gave in her conceptualization, the perspective and foundation of the interventions of nurses on the practical care, promoting the greater autonomy possible to a particular individual/family. This is a fundamental aspect in the philosophy of primary health care and community intervention, because we intend to effectively empower customers so that they assume responsibility for their health process. The empowerment of its potential and performance capabilities is a primary goal, and the constant and clear information is an essential element on the path to autonomy.

2. Context

Community intervention has been developed at an ACES of Lisbon, according to the planning methodology in health. This aims to look for changes in the behavior of populations for example, their health habits or the use of services[4,5]. The intervention focus had as the target population adolescents born in 1993 and 1994 enrolled in UCSP, in September 2011, who had not made the HPV vaccine in a total of 47 adolescents. Data were obtained through the SINUS, establishing as inclusion criteria, to have been born in 1993 or 1994 and having in delay the 1st dose of the HPV vaccine. As an exclusion criteria: pregnant teenagers and all those after telephone contact, sending of a letter

of convocation and conducting home visits that has not been possible to contact. The sample was of 37 users of that health unit and the data was obtained from the SINUS; 17 users were foreign, 9 of chinese nationality and 8 of brazilian nationality. The remaining 20 users had portuguese nationality.

3. Problem, identification of the intervention need and impact

For the diagnosis of the situation we used the "Knowledge of students: HPV and cervical cancer" questionnaire[6]. It evaluates the dimensions: knowledge about HPV; knowledge of cervical cancer; knowledge about the relationship HPV/cancer of the cervix; beliefs and attitudes about HPV vaccination; beliefs and attitudes about sex education; and sexual behavior of the subject. The questionnaire was applied in the period from 31 October to 25 November 2011.

After analyzing the results, using descriptive statistics and supported by the Self-Care Theory of Dorothea Orem, we are able to validate the following problems using the CIPE? language Version 2[(7)]:

- Deficit of knowledge associated with HPV;
- Deficit of knowledge related to cancer of the cervix;
- Deficit of knowledge about the relationship HPV/cancer of the cervix.

According to the problems identified, we formulated the nursing diagnosis, according to the taxonomy of CIPE? Version2: «diminished ability to perform self-care by the population, related to the deficit of knowledge about HPV and the link between HPV and cervical cancer»[(7)].

We determined the priorities opting for the analysis grid, which allows the ordering of problems through the application of criteria divided into dichotomous categories[(4,5)]. For transcendence, we used the questionnaire data concerning the age group, to determine the extent of the problem according to the ages of the subjects. In the relation problem/risk factors, we considered the results of the questionnaires concerning the knowledge of the subject considering the possible risk behaviors. For the vulnerability, we evaluated for each problem the possibility of prevention. In feasibility, we considered the possible temporal resource for intervention, about 4 to 6 weeks given the available time for intervention.

Through the prioritization, we considered the likely problems of intervention:

- knowledge gap related to HPV;
- Deficit of knowledge about HPV relationship/cervical cancer.

Given the guiding framework, we defined as a general goal: reduce the number of young people, in the 1993 and 1994 cohort enrolled in UCSP and who did not have HPV vaccine in the period between October 2011 and February 2012.

We intervene in the System Support and Education[(3)], so that young people are able of self-care and clearly contribute to their structural integrity, functional and human development.

By implementing an educational program for health, nurses should: identify the learning needs; consider how the public learns; analyze the educational issues of concern to the population; design

and implement an educational program; and evaluate the results of the educational program[8].

The General Theory of Education help community nurses to understand how people learn and how to plan and implement education interventions, analyzing client characteristics[8]. We use the Cognitive Theory, as this «argues that changing the psychological patterns and providing information, the user behavior changes»[8].

The intervention activities were defined accordingly to the set goals. These activities resulted from scientific decisions considering the prioritized problems, and from the nursing ethics. After the nursing diagnosis, and given the selected strategy, we intervened in the primary prevention. Each activity had under consideration the parameters: activity; participants; place and date; description; goal; and evaluation. The Health Education Sessions, individually, took place between January and February 2012, at the vaccination office of UCSP (Table 1). We decided to do these activities, because the population did not show availability for programming group sessions and also because «the community health nurses working in the community (…) may have a clinical orientation to the individual as a customer»[9]. These were aimed to promote the prevention of HPV, through information, education, counseling and awareness related to the theme of the virus, its transmission, measures to prevent its spread, sexually transmitted diseases, available vaccines and the administration schedule.

Table 1: *Description of strategies and activities for specific goals*

	Specifics goals	**Strategies**	**Activities**
1	To contribute to the acquisition of knowledge about HPV Cognitive domain	Informing young people about what is HPV; mode of transmission and prevention.	Individual educational activity
2	To sensitize the population about the relationship between HPV and uterine cancer Cognitive domain	Raise awareness among young people to the relationship between HPV / uterine cancer	Individual educational activity
3	To contribute to the educational needs of the population related to the HPV vaccine Cognitive domain	Advise and teach young people about the vaccine and the vaccination scheme	Individual educational activity
4	Increase the specific protection of the population against HPV Affective domain	Fulfill the vaccination schedule recommended by the DGS	Vaccination
5	To promote the self-care of the target population relating to prevention of sexually transmitted diseases Affective domain	Promote sex education, contributing to the construction of a system of values, attitudes and behaviors in the context of sexuality	Individual educational activity
6	Sensitize the UCSP nursing team about HPV Cognitive domain	Promote the knowledge of the nursing team about HPV	Forming activity in service

We drafted and distributed a leaflet about HPV and the relationship with the uterine cancer to the teenagers at the end of the sessions. We also delivered copies in the neighboring high school, to be distributed at the Health Fair. Prompted by the Education Team Coordinator Teacher, we pro-

vided flyers for the Student Support Office. It is relevant to analyze the number of immigrants who now resort to health services. In this sense, the culturally sensitive care emerges as an unavoidable necessity, these imply knowledge of the factors that influence health and disease, and the impact they have on the planning and promotion of health. They also contribute to improving health outcomes as they meet the people's needs. So, we proceeded to translating the brochure in mandarin due to the high number of chinese girls enrolled in UCSP and the perceived difficulties in communication.

The first dose of the vaccine was administered to 37 adolescents who agreed and accepted when they were called to respond to the questionnaire, as recommended in PNV 2012. It is the responsibility of health professionals to «take every opportunity to vaccinate susceptible people, particularly through identifying and approaching to groups with less access to health services»[10].

We administered a second dose of the vaccine between january and february 2012, after the completion of the educational activity. The sample was reduced to 35 teenagers because 2 were abroad. All immunizations were recorded in the SINUS and BIS. We produced a card to register the management and scheduling of the next dose because we found that the adolescents said that if they hadn't been contacted they would have forgotten the second dose of the vaccine. To evaluate this activity we used the adherence and vaccination coverage rate. We obtained an adhesion of 86% for the administration of the first dose and an adhesion of 94.6% for the administration of the second dose. At the end of the intervention the listings of the ACES users were excluded, because in this age group population decreased from 247 to 210 adolescents, which is in agreement with the conclusions derived from the health diagnostic phase, which concludes that many migrants are no longer in Portugal, or at least not in that area of residence.

We created two informative posters; one addressed to adolescents placed in the vaccination floor, in high school and in the parish, the other directed to the general population that we placed in waiting rooms.

Aware of the training needs experienced by nursing professionals, we involved the UCSP team by performing an in-service training activity. This aimed to sensitize the nursing team to the issue of HPV in order to make useful contributions to the acquisition and development of the nurses' skills enabling them to continue this intervention. We used the expository method, through slide projection and we encouraged the active participation of the group, by putting questions and/or suggestions. Regarding the evaluation of the session we made a questionnaire addressed to the participants.

4. Results and discussion

Throughout the intervention, there were some constraints: we considered, as the main limitation, the difficulty in communicating with the population, most being migrants with floating characteristics, and not being contactable in some periods of time. Some of the telephone numbers were not assigned, being the notice sent by letter and also there were also made some unsuccessful home visits, a fact that proved that the population enrolled in UCSP does not correspond to population that resides in the surrounding parishes to the UCSP. We also believe that the small sample size does

not allow us to generalize the findings.

The vaccination coverage rate for the dose first of the HPV vaccine obtained in SINUS was 90% and 81% for the second dose. Thirty seven education sessions for individual health were scheduled.However, it was only possible to carry thirty-five, because two of the teens were in China and had not returned in time for intervention. We have got an adhesion rate of 94.6%, in which 94.3% of the adolescents answered correctly to the assessment questions about the knowledge acquired with the intervention.

The service training action was taken in order to promote the acquisition and development of scientific, technical and cultural expertise[9] suitable to improve care, and promote the development of good practice in the workplace. For this activity we establish activity, membership and participation indicators. A scheduled session was held, in which seven of the eight called nurses were present, thereby obtaining an adhesion of 87.5%, with 100% interest rate.

For these reasons disclosed, we can say that all the objectives have been achieved and that strategies were appropriate.[5] The short-term impact was measured through the process indicator, and the assessment in the medium and long term by the impact or result indicator[4] which will certainly translate into health gains for this population, to the extent that health education and primary prevention appear fundamental policy areas for the control of oncological diseases.

5. Declaration of conflict of interests:

The authors have no conflict of interest to declare

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Perspective

D. Health line 24, 10 years

Author: Sérgio Gomes | Chefe de Equipa da Unidade de Apoio ao Centro de Atendimento do SNS, desde 2006

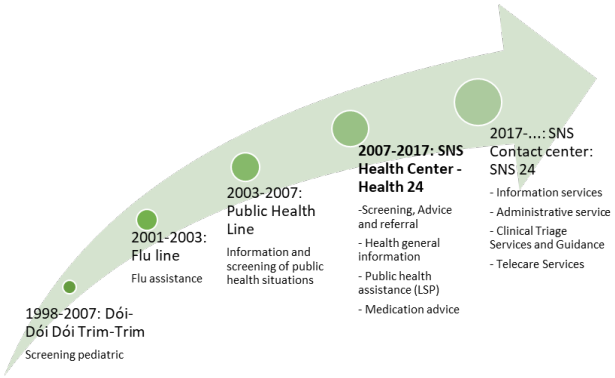
Institution: Direção-Geral da Saúde

Contact: sergiogomes@dgs.min-saude.pt

1. Historic evolution

The National Health Service (SNS) Service Center, known as Saúde 24, started the activity on April 25th 2007, following the good work of the phone lines **Dói, Dói? Trim Trim!** and **Public Health Line**. The latter resulted from a partnership between the Directorate-General for Health (DGS), the Regional Health Administrations (ARS) and the National Health Institute Dr. Ricardo Jorge.

Figure 1: *Historical milestones of the telephone lines that originated the SNS Health Center - Health Line 24*



Its implementation has made it possible to consolidate the primacy of the user at the center of the health system by expanding and improving accessibility to health services 24 hours a day in a multi-channel format (telephone, web, email and fax). Inserted in the health care supply chain and located at the point of entry into the system, it has proved to be an important instrument of support in the provision of health care, in particular by rationalizing the orientation of users in access to services, as well as increasing the effectiveness and efficiency of the public health sector through the referral of users to the most appropriate institutions in the SNS. As a structuring solution, it allowed consolidating and aggregating information and creating structured processes of articulation in the health services network of the SNS, namely:

- Creation of the National Registry of Users, replacing more than 400 user databases;
- Reorganize information from health institu-

tions in the Health Portal to ensure correct referral, after an algorithmic evaluation;

- Implement dedicated links and accesses, namely for INEM;
- Incorporate general health information in a repository for the support and guidance of users, particularly pharmacies and firefighters;
- To implement processes of dematerialization of administrative and clinical information.

The operation of Health Line 24 resulted from a service contract executed by a private operator after an international tender. In this context, the DGS as contracting public entity, followed and monitored the fulfillment of the contract with regard to ensuring the regularity, continuity and quality of care services in addition to support in access to health care provision. The evaluations carried out by the State, both on quality of service and on performance, resulted in penalties of more than 5 million euros for the private operator.

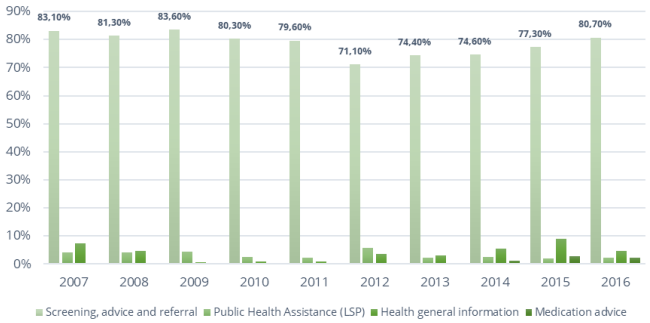
2. Type of services

The focus on real-time assistance, the use of the national single number - 808 24 24 24 - and on nurses as the single contact of the patient, supported by algorithms and other health professionals (pharmacists and clinical management), proved to be a correct strategy. The evaluation of the degree of satisfaction of the users has been carried out periodically by independent entity revealing a satisfaction and notoriety superior to 95%. Health Line 24 offered the users the following services:

- Screening, counseling and referral
- Medication advice;
- General health information (information on NHS health care services, fire brigades and pharmacies;
- Assistance in public health (attended by a team of nurses of the Public Health Line, under the responsibility of the DGS and the ARS, which allowed answering several public health problems).

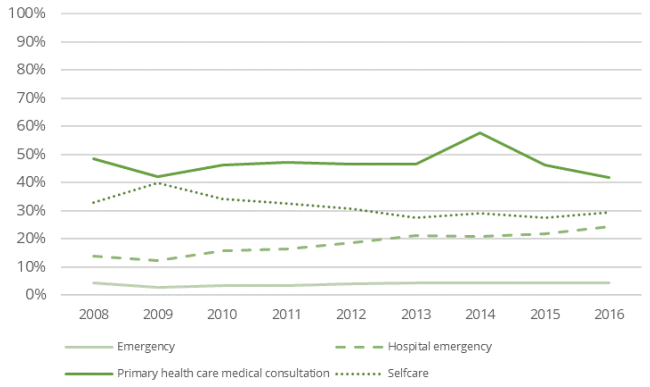
The contacts served amounted to more than 8 million, carried out by 2.5 million people. The service of sorting (average of 78.7%) had the largest share of use, as expected. The ability to adapt to care was highlighted, since more than 50% of the activity was performed between 5:00 pm and 2:00 am. It should also be noted that the weekend service also had higher demand, since it was an easy alternative when the most common offer is the emergency service.

Figure 2: *Distribuition by type of service2007-2016. Portugal*



With the assessment of the level of risk and the identification of the level of health care most appropriate to the situation at the time, it was possible to determine the potential severity and to make the referral to the best qualified provider, according to reference areas of the provider services. The referral to the emergency service was on average 22% and the counseling of the user to manage their health situation, with self-care, 30%. From the evaluations carried out it was observed that the priority given to the users referred was similar to the national results of face-to-face observation with the Manchester Triage.

Figure 3: *Distribution of calls by type of referral 2008-2016. Portugal*



Flexibility and adaptability in the response to health problems, given that demand has a seasonal influence, with more than 40% of the attendance during the winter months, allowed to respond to situations of public health (re)emergence (Severe Acute Respiratory Syndrome, Marburg, Flu Pandemic A, Dengue, Ebola, Legionnaire's Disease, Sulfur Dioxide).

3. Who used Health 24

The user profile was mostly young (up to the age of 44), female and living in large cities in the Litoral (Lisbon, Setúbal, Coimbra, Faro, Porto). However, there is a deviation from the previous pediatric line for the remaining population, in particular, users over 35 years of age. Nonetheless, penetration in the age group above 65 years was greater, currently representing 17% when initially, it was 5%.

Figure 4: *Average distribution of users by sex in the last 10 years. Portugal*

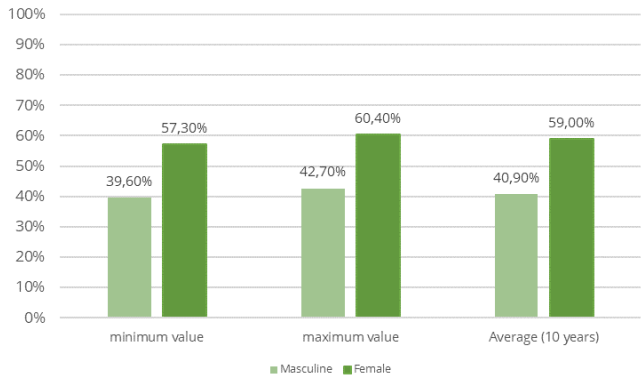
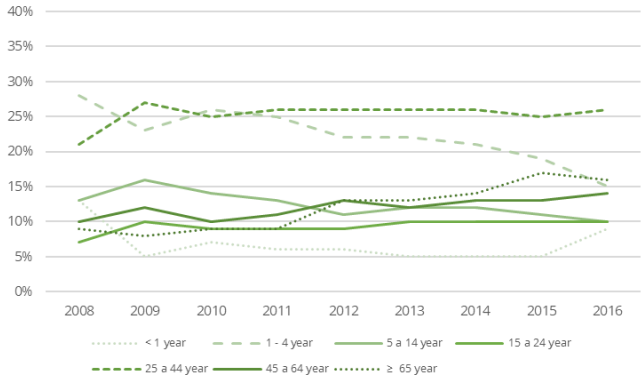


Figure 5: *Distribution of users by age group and year 2008-2016. Portugal*



4. Estimated savings in the emergency service

It is noted to have been clearly achieved a major goal of Health 24: the reduction of unnecessary visits to emergency services, despite the average daily number of 2,500 calls not allow to show the deserved visibility. However, the annual impact studies showed an effective behavioral change after the clinical evaluation: on average, more than 80% of the patients who had the intention to go to the emergency service, had no indication and ,eventually, did not go. This situation allows us to estimate that the expense avoided with emer-

gency services in 2016 was twice the cost of activity/year. This demonstration of user confidence reinforces the idea that the way forward has been important so that we can be able to evolve to a new dimension, adding more value to the work already done. And create value for users.

Table 1: *Estimated saving in the emergency department*

	National study 2015 (july to september) - 3 months	**National study 2016 (july to september) - 3 months**
Diverted users from emergency services (<24h) (number)	20116	29512
Average cost urgency service (euros)	99,31	99,31
Estimated savings (euros)	1997719,96	2930836,72
Estimated savings/year (euros)	7990879,84	11723346,88
Activity cost/year (euros)	6244998,83	4521366,12

5. Aknowledgements

Finally, we would like to highlight the work of nurses, in particular, the ones of the Team Line Public Health that with commitment, high availability, dedication and expertise have helped in responding to various health problems.