

The Cost Per Patient in a Long-life Unit and Maintenance

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With the increase in average life expectancy, care for the chronically ill has become an important area in the context of health services. Cost accounting in the health care area is proved to be fundamental as an information tool for decision making, in a sector where managers are increasingly encouraged to provide more and better care at lower prices. With the creation of the National Network of Integrated Continuous Care (NNICC), it is the Long Term Care and Maintenance Units (LTCMUs) that receive more dependent patients, in need of comfort care and palliative actions. There are studies that ensure that the implementation of a palliative model reduces costs and makes the management and use of human and material resources more efficient. It is a quantitative and descriptive study, of retrospective character, whose general objectives were: to develop a comparative study between the practices in use in the Institution; to standardize monitoring strategies; to propose a health management model that takes into consideration the reduction of suffering and the efficiency of resources. The last 30 days of users' lives were analyzed, in terms of resources used. We calculated a daily co-participation value per user higher than the co-participated value. We concluded that the financing due to LTCMU does not take into account the real needs of users, requiring institutions to allocate human resources and materials higher than the co-funded.

Keywords: palliative care, end-of-life costs, health management

Introduction

With the increase in average life expectancy, care for the chronically ill has become an important area in the context of health services. In other words, health services, which until then had focused on treating the disease, are now increasingly focused on the need to offer palliative rather than curative care. Rationalisation of resources must be an objective, so that waste is minimal.

Caring for a person is about caring for them and this involves attitude, commitment, and responsibility. Through the activities of daily life of a person who lives in a situation of extreme vulnerability, it is possible to contribute to making him/her feel welcome and confident to alleviate his/her suffering, respecting his/her autonomy and helping him/her to find meaning and hope. Through the gestures, words, and looks that accompany this care, it is possible to preserve the sublime dignity of the person (Guerrero, 2014).

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Having as guidelines to defend life and accept death as a natural process, which neither anticipates nor delays it, to promote the autonomy and dignity of the patient, improving his well-being and quality of life, through individualized and holistic therapeutic plans that address physical, psychic, social, and spiritual problems, including also caregivers, palliative care constitutes an added value and should exist in all health care institutions, where there are patients with intense suffering, especially in the most differentiated hospitals (Carneiro, Barbedo, Costa, Reis, Rocha, & Gonçalves, 2011).

Like Parker's study (2002), by keeping a record of the patients who died, it allows us to honour their memory and reminds us of important lessons that each one has taught. Each story has its own need which allows us, through its analysis, to improve our understanding of the other and respect as an individual. Life and death will always remain part of our existence. If the pain of birth can already be controlled, why is the pain of death still not valued? Knowing and caring for people in the last chapter of your life is undoubtedly a learning and preparation for an inevitable certainty. And according to Carneiro et al. (2011), care to be considered of excellence for terminal and agonistic patients requires a complete assessment of the symptoms, in their complexity, and also of the needs of patients and relatives, towards a holistic vision.

Steen, Hertogh, Boer, Hughes, Larkin, Francke, and Volicer (2013) suggest, in their study, that research should be done on long-term social facilities, where patients with dementia find themselves, as well as cancer patients, since that is where patients die, and it is possible to understand the socio-cultural context and the impact of policy and institutional management measures on the care provided to the end-of-life patient.

In this sense, the latest registrations have been collected concerning users who died while they were admitted to LTCMU at Sernancelhe Mercy, and this collection is limited to the period between August 2015 and August 2018. All the costs inherent to their admission were analysed and an average daily price can be found, according to their typology (which was assessed on the basis of dependency and clinical needs).

This is a quantitative and descriptive study, of a retrospective nature, whose general objectives are: to develop a comparative study between the practices in use in the Institution, from its opening to the present; to standardize monitoring strategies; and to propose a health management model that takes into account the reduction of suffering and the efficiency of resources.

The specific objectives are: to identify the practices in use in the Institution; to identify the needs and adjust the therapeutic plan, in order to improve the quality of life and minimize its suffering, and, if possible, to save financial resources; to present a study on all the costs inherent to the object of the study; to present a strategic proposal for the management of cases considered at the end of life included in LTCMU.

The population consists of 249 users who, during this period, have been admitted to LTCMU at Sernancelhe Mercy. The sample will include the users who died, the last 30 days of life being analysed in terms of resources used, which corresponded to a total of 57 users and allowed a calculation of the daily value of the co-payment for their hospitalisation, in this phase of the last 30 days of life.

The demographic and morbidity data present were evaluated and the records regarding the symptoms presented by the patients in the last 30 days of life, as well as the strategy aimed at symptomatic control, were reviewed. Gastric intubation, intravenous hydration, algae and intravenous punctures used to ensure hydric, caloric and medication administration in terminally ill patients, the objective was to perceive if there is an attitude directed more towards cure than towards the problems felt by the patient at the end of life. Then, a translation of these records was made in terms of the economic values of these resources, in order to understand the possible unnecessary expenses and, thus, to elaborate a model that helps in the decision making.

An analysis of the daily costs of user care was carried out and they were divided according to their dependence and clinical needs at the end of life. In the end, it was possible to establish a real value of these needs, which, in contrast to the co-payment value, is not sufficient to suppress.

Review of Literature

The World Health Organization (WHO) estimates that more than 40 million people in need of palliative care worldwide each year and recognises the efficiency and cost-effectiveness of various forms of palliative care organization in relieving suffering. According to it, palliative care is an approach that enhances the quality of life of the individual (and his/her family), who faces an advanced and life-threatening disease, through the prevention and relief of suffering. Palliative care should be introduced as soon as possible when the first unresolved needs arise. They should be maintained and intensified throughout the disease process, as they are most needed in the advanced stage. Treatment measures and those that are palliative coincide in time; with the progression of the disease, they are moving towards exclusively palliative management in a gradual and individualised manner (Ministerio de Sanidad, Política Social e Igualdad, 2011; cit. by Alves, 2015).

National Integrated Continuing Care Network

The National Network of Integrated Continued Care (NNICC) was created by Decree-Law No. 101/2006 of 6 June in a partnership between the Ministry of Labour and Social Solidarity (MLSS) and the Ministry of Health (MH) and is made up of a number of public sector and private sector institutions, both profit-making and non-profit. In partnership, these institutions provide tailored care focused on the needs of individuals, in response to the socio-demographic changes that have occurred in recent decades. This response has been developed for people in a situation of dependency, who benefit from continued health care and social support regardless of age. Such care can be preventive, palliative, or rehabilitation (Portugal, 2006).

Users are referred to the NNICC, according to the criteria previously established for each typology, by the senior management teams of acute hospitals or by the primary health care referral teams. The local coordination team of the user's area of residence evaluates the referral process and places the user in the unit with a vacancy, using the geographical options previously made by users or families during the referral process (Portugal, 2017).

The reference criteria for the NNICC are people with functional limitation, in the process of chronic illness or following acute illness, at an advanced or terminal stage, throughout the life cycle and with health care and social support needs. The following situations are also general conditions for admission to all types of NNICC: enteric feeding; treatment of pressure ulcers and/or wounds; maintenance and treatment of stomas; parenteral therapy; respiratory support measures, namely oxygen therapy or assisted ventilation; therapeutic adjustment and/or administration of therapy, with continued supervision (Portugal, 2017).

End-of-life Costs and Their Financing

The NNICC management model involves the decentralisation and contracting of services. It has three levels of coordination (local, regional, and national), with teams composed of elements from the health and social security area. The costs resulting from the provision of health care and social support in the network are shared between the MLSS and the MH (Portugal, 2011).

There is also a component of financing that comes from the user's and/or households' share in proportion to their income, which is determined by the resources condition at the time of referral to the network. This

component is only intended to co-finance the percentage of expenditure from social support and is ultimately fully supported by the MLSS. It should be noted that, in addition to the fixed price paid per user/day, to the providers, the network has costs associated with the referral and monitoring of the units which are frankly exacerbated by the cost per bed in the NNICC, demonstrating the urgent implementation of corrective measures at this level.

The spring 2011 report revealed that the "real average daily cost" of a patient in the integrated long-term care network was 82 \leq day, with an average daily hospital stay of 403 \leq day. He added that an inpatient bed at the NNICC has an average cost of \leq 2 per day but the average cost of a day at the NNICC is \leq 237,941 (OPSS, 2011).

In this regard also the National Continuing Care Association (NCCA), in its report of 2017 proposes a study of the actual daily cost per patient in the different types taking into account the changes imposed by current legislation, the change in profile and characteristics of users referred to the NNICC, in order to make a correct and fair calculation of the amounts to be paid per user either by the Ministry of Health or the Ministry of Labour, Solidarity and Social Security. This daily cost is very different (higher) when we talk about integrated long-term care units in the interior of the country so there should be an increase in these situations.

In a study Geue, Wu, Leyland, Lewsey, and Quinn (2016) comparing the costs of internment based on geographical variation, they also conclude that rural areas suffer greater challenges to provide end-of-life care, thus, once admitted to hospitals in urban areas, the costs increase significantly, and also the lack of family care and social conditions become a reason for not being discharged.

Perhaps this allocation of resources should be done through more appropriate strategic planning. That is, end-of-life user care should be recognised as a specific area, with very specialised training and targeted at this area of work, because perhaps then, with greater knowledge, it would be possible to optimise the distribution of patients.

Complex patients with functional dependencies generate higher costs, which are doubly higher than patients with similar levels of comorbidity but who are not functionally dependent. Alzheimer's and other cognitive dementia patients also significantly increase the costs and time of using health services (Bynum, Rabins, Weller Niefeld, Anderson, & Wu, 2004, cit. by Holland, Evered, & Center, 2014). Inappropriate strategies at this stage of life can lead to unnecessary suffering for patients and their families (Alves, 2015). According to Holland, Evered, and Center (2014), about one third of the costs associated with health expenses incurred in the last year of life are mostly incurred in the last month of life. This is because much of these costs result from life support or multiple visits to hospital and a poorly coordinated care network, suggesting that there is potential in the need to reduce or avoid some of these costs and thus improve patient care.

Only when the total costs of a complete cycle of treatment, with associated complications and comorbidities, are perceived can a price per patient be determined that is financially sustainable for the institution. Several studies show that the use of palliative care allows for significant savings in health expenditure, especially in the last month of life when it can reach 25 to 40 per cent of expenditure (Ribeiro, 2014).

Methodology

The study is of a quantitative, retrospective, and descriptive nature. This study is the result of a retrospective analysis, of a review of the clinical processes, namely the last 30 days of life. It is a case study,

which after the analysis of the results, will propose a management model and verify the practices in use in the institution.

The demographic and morbidity data present were evaluated and the records of the symptoms presented by the patients in the last 30 days of life, as well as the strategy aimed at symptomatic control, were reviewed. Gastric intubation, intravenous hydration, algae and intravenous punctures used to ensure hydric, caloric, and medication administration in terminally ill patients, the objective is to perceive if there is an attitude directed more towards cure than towards the problems felt by the patient at the end of life. Then, a translation of these records, in terms of the economic values of these resources, will be made in order to understand the possible unnecessary expenses and, in this way, to elaborate a model that helps in the decision making.

The case study methodology aims to answer questions of how and why, from real contexts, in the life cycle of the organisation. It is a method commonly used in the field of economic sciences, to study organisations and behaviour, and can use qualitative, quantitative or even both. The aim is to interpret and analyse the results in their own context. One of its most important features is to concentrate on a single case through the exhaustive and detailed analysis of the data relating to that case, opening up the possibility of increasing knowledge about that specific object of study (Ribeiro, 2014).

The population of this study corresponds to a total of 249 users, who passed through Mercy's LTCMU between the period of August 2015 and August 2018, of which only those who passed away while admitted to LTCMU were considered for sampling.

The sample selection process for this investigation was non-probabilistic, accidental. A total of 57 users who were admitted to LTCMU were analysed. Inclusion and exclusion criteria were established. Inclusion criteria were included: (1) death occurred during their stay at LTCMU, even when they were in a reserve position; (2) the analysis focused on the last 30 days of life or shorter, depending on the length of stay; (3) limited between the period of August 2015 and August 2018.

Results

Data were collected using an excel table, then excel databases were carried out, where the individual values of the procedures under analysis were determined. The reports of the years under study were analysed in order to obtain information on the costs of external supplies, depreciation and amortization values. Some of the data were submitted to correlational analysis in order to understand the relationships between some of the variables under analysis and for these the SPSS software application was used as a resource.

The demographic data, in terms of gender, age group, referencing, provenance, degree of dependence and length of stay, are presented in Table 1.

Demographic Data Demographic data Frequency % 56.1 Male 32 Sex Female 25 43.9 20-29 years 1 1.8 1 1.8 30-39 years Age group 40-49 years 2 3.5 50-59 years 1 1.8

Table 1

| (Table T to be continued) | | | | |
|---------------------------|-----------------------|----|------|--|
| | 60-69 years | 5 | 8.8 | |
| | 70-79 years | 15 | 26.3 | |
| | 80-89 years | 22 | 38.6 | |
| | 90-99 years | 10 | 17.5 | |
| Referencing | Hospital centre | 36 | 63.2 | |
| | Transfer NNICC | 9 | 15.8 | |
| | Home | 8 | 14.0 | |
| | Palliative care units | 4 | 7.0 | |
| Degree of dependence | Dependent total | 47 | 82.5 | |
| | Dependent partial | 10 | 17.5 | |
| Hospitalization time | 1 to 30 days | 20 | 35.1 | |
| | 31 to 60 days | 10 | 17.5 | |
| | 61 to 90 days | 6 | 10.5 | |
| | 91 to 120 days | 5 | 8.8 | |
| | 151 to 180 days | 4 | 7.0 | |
| | 181 to 210 days | 1 | 1.8 | |
| | 211 to 240 days | 1 | 1.8 | |
| | 271 to 300 days | 1 | 1.8 | |
| | 301 to 330 days | 3 | 5.3 | |
| | 331 to 360 days | 1 | 1.8 | |
| | Over 360 days | 5 | 8.8 | |

(Table 1 to be continued)

As can be seen, the majority of this sample is male and the predominant age bracket is between 80 and 89 years, with the period between 70 and 99 years corresponding to 82% of the sample. For only 10 users of those who died, the death occurred before 70 years of age.

The reference is mainly Hospital Centre, being the Hospital Centre of Lamego the one that most references users to LTCMU of Sernancelhe Mercy. This is followed by transfers between units, which is possible due to the proximity to the area of residence (of the own or the carer).

The users are referenced according to some criteria defined by the NNICC itself, being the dependency one of them. Because it is an LTCMU and because research has been carried out on those who have died, 82% of these users are totally dependent and the rest have a partial.

The length of stay refers to the length of time the user has been in the LTCMU and the length of time the user has been in the Gestcare platform as a user admitted to this LTCMU. This is because, in case of worsening (worsening of their health) the user is entitled to a reservation period of 8 days, which can go up to 12 days, in specific cases and defined in the NNICC. In some of these users analysed, the death occurred in the hospital. However, the user was in this level of vacancy reservation, which despite not being reimbursed this daily amount, he continues to account for the occupancy rate (amount that is reversed in revenue, as a financial sum).

One of the most important aspects that was possible to ascertain in this survey was that users are referenced already at a very late stage of their lives, the vast majority of users who died, were not even two months in LTCMU (about 50% of the sample), and some of them have a stay of five to nine days. They are debilitated users who are referred because their relatives are unable to receive them at home, or have no caregiver, and the hospital refers them to respond, often to social problems, and in this case also with the criterion of the need for palliative actions.

THE COST PER PATIENT IN A LONG-LIFE UNIT AND MAINTENANCE

The vast majority of end-of-life patients have a need for dressings, due to the presence of pressure ulcers, stomata and surgical wounds, often caused by the introduction of an external. It has also been found that more than 60% of patients have a bladder and nasogastric tube at this stage of the last 30 days of life.

In the study by Bailey, Kathryn, Woodby, Williams, Redden, Kovac, and Goode (2005) the indicator of reduction of interventions such as NGS was negligible, since there is a lot of resistance to change in this respect, either because it is a form of feeding or also because it is one of the main routes for the administration of medication, among them analgesia.

Almost 80% of users need to aspirate secretions, because also in this final stage of life, the presence of abundant secretions, the so-called estertor, is another symptom, as well as, when the user no longer tolerates feeding and is in the process, leading to the need to aspirate food content, or placing a drainage probe. Serotherapy is often placed as a response to a zero diet, as a way to hydrate and administer medication at the end of life. In about 60% of users this was the procedure prescribed by the doctor and administered by the nursing team. Finally, medicinal gases, about 80% of the users needed to perform oxygen and nebulizations, because some of the medication is administered on this route of nebulization.

An analysis of the computer records of the nursing team was carried out, in order to ascertain the practices in use at LTCMU, and also focused on an analysis of the records in symptomatic terms, in order to understand which symptoms are valued and, in this way, are present or not, in the users in the last 30 days of life, as well as those end-of-life symptoms which should be recorded at the end of life, but were not in some way valued and are therefore as unregistered. For this symptomatic choice, we based ourselves on the study by Carneiro et al. (2011).

It is crucial to group patients into categories, as their individual characteristics determine different levels of resource consumption, thus obtaining the real cost of each patient type. This information will be important in resource management, since a unit within the NNICC does not choose patients to admit and is constantly remunerated, regardless of the individual characteristics of the user.

The totally dependent patient (TD) has multiple needs, which consume more resources than the rest. On the basis of the study carried out by the National Institute of Administration in 2009 to characterise the users of the National Integrated Continued Care Network and on the basis of the historical data of this unit, the TD is considered to represent around 60% of all users of this unit. The partially dependent patient (PD), on the other hand, has needs to a lesser extent, but needs support in day-to-day tasks and surveillance and using the same method used previously, it is considered that this represents approximately 30% of the total users of this unit.

Although it is the most dependent users who require the most clinical and nursing care, they also have the least interventions from the multidisciplinary team. This is because occupational therapy, socio-cultural animation, speech therapy, physiotherapy and psychology focus more on the aspect of rehabilitation and training of functionalities and cognitive stimulation.

In order to be able to calculate a daily value, the rule has been maintained that on average, the dependent users (TD) in LTCMU correspond to about 60% of capacity and the partial dependent (PD) will be 30%. Therefore, after calculating the allocation per professional, the value was divided by 18 users (60% of 30) in the case of TD, and by 9 users (30% of 30) in the case of PD, then this result was divided by the number of days to which it corresponded in time (depending on the year under review). This produced an average value per professional, depending on the year in question, for each of these types of users.

In addition to the value allocated to human resources, expenditure on external supplies and services (which includes expenditure on specialised services; materials; energy and fluids; travel, accommodation and transport and finally other miscellaneous services) was taken into account and then divided by the 30 users and the number of days under analysis.

Finally, the analysis was made for depreciation and amortization, the costs of wearing out assets, which were also calculated for the period and then divided by the 30 users and the number of days under analysis. It was considered that these, should be equally distributed and allocated to all patients, since regardless of patient type, the facilities and equipment are at the service of all and their use will be approximately similar.

Therefore, the average value per user per day was calculated, whose values are shown in Table 2.

Table 2Daily Cost Per Type of User

| Price per day(€) | | | | | | | |
|------------------|-------|------|-------|-------|-------|-------|-------|
| 2015 | | 2016 | | 2017 | | 2018 | |
| TD | PD | TD | PD | TD | PD | TD | PD |
| 45.99 | 54.64 | 62.9 | 70.77 | 63.88 | 71.63 | 59.61 | 68.81 |

Considering the sums between the daily value obtained in the allocation of human resources, with the provision of external services and the rate of depreciation and amortization, together with this average analysis of the price of goods and material consumed per user, a value closer to reality was obtained, considering the needs of users in the last 30 days of life.

Table 3

Price Per Day Calculated

| | 2015 | | 2016 | | 2017 | | 2018 | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
| | TD | PD | TD | PD | TD | PD | TD | PD |
| Human resources/external services supply/depreciation | 45.99 | 54.64 | 62.9 | 70.77 | 63.88 | 71.63 | 59.61 | 68.81 |
| Clinical material and practices | | 12.25 | 20.88 | 9.95 | 28.97 | 15.55 | 21.31 | 7.97 |
| Value day | 58.24 | 66.89 | 83.78 | 80.72 | 92.85 | 87.18 | 80.92 | 76.78 |

As can be seen from Table 3, in average terms, this is equivalent to a daily cost of \notin 78.94 for TD, and \notin 77.89 per day for PD, instead of the current payment of \notin 62.15, which each LTCMU user receives per day.

The institution loses out at the end of this period, with a negative balance, as it receives the current value of 62.15 per dependent user per day, whereas in reality it should receive the established value of 78.24, thus reverting to a daily negative balance per user of about 60.09, which in one month is less 6482.70 per user.

After analysing the data, in terms of correlation between the two variables, it is concluded that there is a statistically significant difference between the value of revenue and expenditure. As the *p*-value is below 0.05 for a 95% confidence interval.

After the presentation of the data we must analyse them and understand them, as a management, namely what aspects can be worked on in order to reduce costs for the Institution, not diminishing the quality of the services provided to the end user. In this context there are some questions that arise that may help us to define a decision-making model.

THE COST PER PATIENT IN A LONG-LIFE UNIT AND MAINTENANCE

Observing our data, focusing on the institution under study and the care provided to the end-of-life user, always based on the fact that care of excellence and quality raise costs, the question arises: would it be possible to reduce in number or costs, human resources?

And as management, this may be one of the points to be reviewed. Not that there are too many staff, but perhaps they could be allocated to other social responses, or else, taking into account the legal standards for LTCMU, the institution could restrict some of the professional profiles to those required by ordinance No. 50/2017. To resort to external services, for example, in partnership and the elaboration of protocols with other institutions, since it does not involve so much investment on the part of the institution. Seek to dynamise voluntary service in the community and accept candidates for curricular and professional internships. Make applications to the Institute for Employment and Professional Training for the hiring of unemployed people or incentive internships, for some periods. But also, as ANCC (2017) reinforces the obligation to increase the workload of certain professional groups, especially nurses, without revising the amounts paid to the integrated long-term care units, translates into the escalation of costs that has been occurring in recent times.

There should be a protocol for care in the terminal phase, to be followed by the multidisciplinary team and articulated with one's own and the family (such as Liverpool Integrated Care Patways), which will allow for the standardization and standardization of behaviour, integrating effective and efficient communication with one's own and family members, readjusting expectations and preparing for the moment of departure (bereavement). This should integrate:

• Discontinuing non-essential medication;

• Opting for subcutaneous medication, if possible, because it is less invasive and painful;

• Discontinuing interventions that cause pain, such as clinical analyses, intravenous fluids and observation of vital signs;

- Allowing the spiritual and religious needs of the patient;
- To outline the way to communicate (procedure of communicating bad news with the relative);

• Establishing a plan of comfort care: introduction of analgesia and reduction of symptoms; elimination of some instrumental procedures; psychosocial interventions; spiritual support; environmental modifications (improving nutrition);

• To train the team, in order to ensure technical consistency, these procedures are established and training is given;

• There is the non-resuscitation order (NRO) which is a clinical process, reflecting the level of communication with the patient and his/her family members necessary to understand the value of their preferences and the exchange of information about interventions and prognosis (Bailey et al., 2005).

The aim of this model is to reduce the costs of interventions by limiting or discontinuing some procedures, based on the palliative care model, while maintaining the quality of service and care for the user, as this is the only way to move from curative medicine to palliative medicine.

Conclusion

After this research we can answer some of the questions that were raised at the beginning, first of all to understand that the practices in use in the institution are assertive and meet the welfare and quality of service provided to end-of-life users, but can be complemented with the support of a model of palliative care, which is verified to meet the needs of users admitted to LTCMU. The implication of this study is that the needs of end-of-life users are being unduly reimbursed by the State. Patients are placed at LTCMU by the criterion of dependency and their rehabilitation time, however, about 60% of these patients have no rehabilitation capacity and when they arrive at LTCMU they are in a very advanced stage of illness, with comfort care and palliative actions being their main care. These patients require a whole team, a renewal of their training, a new look and the need to adjust their expectations. Also the families have to readjust their expectations, the fact that they are discharged from hospital, gives a false sense of improvement in health, as well as admission to NNICC strengthens the sector of rehabilitation and especially physiotherapy.

Although it is an LTCMU, there are already established practices and procedures that seek to respond to the real needs presented by users and not only to their criteria of dependence or rehabilitation. However, it is clear that for a quality service provision that allows for a personalised look at the individual needs of the users, higher human resource costs, ranging from the possibility of training and their specialisation, to their professional development, are also required. This also implies a greater challenge and limitation for some of these professionals in geographical terms.

By analysing an Institution considered as being from the North zone, but based in a central interior zone (Sernancelhe), it was possible to find some regional constraints, among which referral (the reference Hospital Centre of the zone is Viseu, which because it is from the central zone, rarely refers); the rotation of users (who, as they are from areas with more North coast, ask for transfer as soon as they are admitted); the lack of means of transport (and the road accesses); the offer of training (as they are from the North area, the training takes place in Porto, or in Mirandela, and the Institution is not remunerated for this displacement).

Other constraints of this LTCMU are the difficulties in releasing social vacancies; difficulties in hiring human resources (mainly speech therapy and occupational therapy, as these are 20-hour services); turnover in human resources (there is a lot of change, mainly in nurses, partly due to job offers in more attractive and better paid urban areas).

LTCMU is considered the poor relative of the NNICC, but the response is less co-funded, with a requirement for allocation of human resources and user typology that condition the higher health costs. Being from within, as analyzed in the theoretical review, greater challenges are presented to these institutions. In addition, clinical and end-of-life care exceed in expenditure the co-payment value, and there is no distribution according to the needs of the user, but a standardised value based on dependence, which, as has been seen, only corresponds to about 30% of the admitted population.

Based on the theoretical revision presented and on the studies that argue that a palliative model presents a reduction in costs, a decision-making model is suggested where the procedures to be reviewed are listed, in case this is possible. It is also suggested that Mercy Sernancelhe should involve professionals in reducing costs and consuming resources, which will directly result from the training received and the implementation of this model, as well as an internal policy of employee satisfaction.

If the organisation increases its efficiency and provides care of excellence, it will be more competitive. It can move towards quality certification and bet on applications that allow it to obtain some financial return.

References

Alves, A. L. (2015). Necessidades em cuidados paliativos: das pessoas institucionalizadas com demência avançada. Tese de Dissertação de Mestrado, Universidade de Medicina do Porto, Porto.

ANCC. (8 de Agosto de 2017). Diagnóstico sobre o funcionamento da RNCCI e Proposta de Soluções. Disponívelem: http://app.parlamento.pt/webutils/docs/doc.pdf

- Bailey, F. A., Kathryn, L. B., Woodby, L. L., Williams, B. R., Redden, D. T., Kovac, S. H., & Goode, P. S. (2005). Improving processes of hospital care during the last hours of life. *Annual Assembly of the American Academy of Hospice and Palliative medicine* (pp. 1722-1727). Baltimore: VA Health services Research & development national meeting.
- Carneiro, R., Barbedo, I., Costa, I., Reis, E., Rocha, N., & Gonçalves, E. (2011). Estudo comparativo dos cuidados prestados a doentes nos últimos dias de vida. Acta Médica Portuguesa, 545-554.
- Geue, C., Wu, O., Leyland, A., Lewsey, J., & Quinn, T. (2016). Geographic variation of inpatient care costs at the end of life. *Age and Ageing*, 45, 376-381.
- Guerrero, M. V. (2014). Aportando valor al cuidado en la etapa final de la cronicidad. Enfermaria Clinica, 24(1), 74-78.
- Holland, S. K., Evered, S. R., & Center, B. A. (2014). Long-term care benefits may reduce end-of-life medical care costs. *Population Health Management*, *17*(6), 332-339.
- OPSS. (2011). Da depressão da crise para a governação prospetava da saúde: Relatório Primavera 2011. Lisboa: Escola Nacional de SaúdePública.
- Parker, R. (2002). Caring for patients at the end of life. American College of Physicians—American Society of Internal Medicine, 136, pp. 72-75.
- Portugal. (6 de junho de 2006). Decreto Lei n 101/2006. Diário da República n. 109/2006, Série I-A. Casa da Moeda.
- Portugal. (1 de junho de 2011). Portaria n. 220/2011. Diário da República n. 106/2011, Série I. Casa da Moeda.
- Portugal. (2 de fevereiro de 2017). Portaria n 50/2017. Diário da República n. 24/2017, Série I. Casa da Moeda.
- Ribeiro, A. C. (2014). Contabilidade de Custos na definição de tabelas de preços. Tese de dissertação de mestrado, Faculdade de Economia e Gestão, Universidade Católica do Porto, Porto.
- Steen J., L. R., Hertogh, C. M., Boer, M. E., Hughes, J. C., Larkin, P., Francke, A. L., & Volicer, L. (2013). White paper defining optimal palliative care in older people with dementia: A Delphi study and recommendations from the European Association for Palliative Care. Palliative Medicine, 1-13.