

CAUSES OF PROLONGED HOSPITALIZATION IN THE MEDICINE SERVICE OF HOSPITAL AGOSTINHO NETO, IN THE CITY OF PRAIA DE CABO-VERDE

Maria Manuela Pereira

``Universidade de Cabo Verde, Cabo Verde``,
School of Business and Governance
Campus -Palmarejo Grande-Praia-Cabo-
Verde

Maria de Lurdes Gonçalves

``Universidade de Cabo Verde, Cabo Verde``,
School of Business and Governance
Campus -Palmarejo Grande-Praia-Cabo-
Verde

Herlander Rodrigues

``Faculdade de ciências e Tecnologia,
Universidade de Cabo-Verde``
Campus do Palmarejo Grande-Praia-Cabo-
Verde

All content in this magazine is licensed under a Creative Commons Attribution License. Attribution-Non-Commercial-Non-Derivatives 4.0 International (CC BY-NC-ND 4.0).



Abstract: The rational use of hospital beds, as well as adequate management of hospital stays, is often cited as an operational measure in hospitals. This article aimed to analyze the causes associated with prolonged hospitalization in the Medicine Service of Hospital Agostinho Neto. Methods: characterized as an observational retrospective and documentary cohort study carried out in the Medicine Service of the Agostinho Neto hospital, Praia Cabo-Verde. A cohort was identified in the administrative database of files of all patients admitted to the service during 2018. Results: 1008 patients were selected, of which 505 (50.1%) were female and 503 (49.9%) male aged between 13 and 98 years, with an average of 54 years and Standard deviation of 20.805. Regarding length of stay, 507 patients remained hospitalized for more than 7 days with an average length of stay of 10 days, with a minimum of 1 day and a maximum of 369 days. The most prevalent diagnoses were diseases of the circulatory system with 283 (28.1%), diseases of the respiratory system with 187 (16.6%), followed by infectious and parasitic diseases with 115 (11.4%), and diseases of the genitourinary system with 88 (8.7%). Other clinical conditions had frequencies below 10%. There was a statistically significant relationship between the variable age and length of stay $p = 0.033$, as well as a statistically significant association between length of stay and diagnosis with $p < .001$. Conclusion: age is one of the causes associated with prolonged hospitalization time and the other variables did not show a statistically significant association with the exception of the hospitalization diagnosis, that is, the higher prevalence of diseases of the circulatory system proved to be an important factor in the length of stay. hospital admission. **Keywords:** Period of Hospital Stay, Prolonged Stay.

INTRODUCTION

Hospital length of stay (TIH) has been intensely debated in recent decades due to its great impact on the management of health services and associated costs. In most low- and middle-income country settings, HIT in acute care wards has been associated with an increased risk of adverse events, in-hospital morbidity, mortality, and readmission after discharge, as well as a marked increase in healthcare expenditure (Hawkes, 2012, Roque, Tonini, Melo, 2016). For (Rufino et al., 2012) hospitalization is a resource in the health sector whose main objective is the attempt to recover the individual's health. And, when this period is prolonged in terms of days of hospitalization, there is an increase in costs and a reduction in bed turnover. Measures that aim to reduce hospital stays are highlighted as important strategies to reduce the costs of health services, without compromising quality (Pocinho, 2019, Rojas et al., 2018).

The Medicine Service at Hospital Agostinho Neto in the city of Praia Cabo Verde, as well as most inpatient services in public hospitals in Africa, face numerous difficulties in terms of managing occupancy rates. According to the Ministry of Health and Social Security in 2013, for example, 944 patients were admitted, whose average stay was 10 days, an occupancy rate of 94%, and the average age of patients was 51 years (Cabo Verde - MSSS, 2019).

In Cabo Verde, the National Health System (SNS) faces some difficulties resulting from new challenges arising from changes in the country's epidemiological profile, growing expectations of Cabo-verdianos in terms of health, as well as the lack of resources to face demand from the healthcare sector. Given the importance and relevance of recognizing the difficulties or obstacles that managers and healthcare professionals face in their daily lives, the present study aimed to analyze the causes

associated with prolonged hospitalization in the Medicine Service of Hospital Agostinho Neto and verify the association between clinical and sociodemographic variables in relation to length of stay.

METHODOLOGY

Observational retrospective and documentary cohort study carried out at the Medicine Service of Hospital Agostinho Neto (HAN), Praia de Cabo Verde. A cohort was identified in the administrative database of the files of all patients admitted to the service during 2018, which allowed retrospective observation and analysis of the predictor variables and outcome (Oliveira et al. 2015). In this study, a hospitalization in the HAN Medicine Service for a period equal to or greater than 7 days was considered as prolonged hospitalization, which reflects in general terms the reality of the service as well as the estimated average time in most hospitals in the country. Considering the nature and complexity of the study object, we opted for a methodological triangulation in terms of data collection, that is, an approach that combined the cross-use of instruments from both qualitative (semi-structured interviews) and quantitative research (processes with hospitalization records) (Duarte,200).

For the present study, triangulation was sequential, that is, first the quantitative data were collected and only then the interviews, which allowed the identification of representative members of the sample, and at this stage the quantitative data facilitated the evaluation of the generalization of the qualitative data and launched a new perspective on qualitative results. For the object of study, the qualitative approach had as its main objective to understand the experience of prolonged hospitalization in the light of the doctors' perspective and in this sense, semi-structured interviews were

carried out with open questions that allowed access to detailed reports of prolonged hospitalization and its impact on the functioning of the services. The quantitative approach aimed to establish facts, highlight relationships between variables by checking hypotheses, predict cause-and-effect results, that is, identify among the sociodemographic and clinical variables which have the greatest impact on prolonged hospitalization. For this purpose, documentary research was carried out in the HAN Statistics Service database.

POPULATION AND SAMPLE

The target population refers to the population that the researcher wants to study and to which he or she wishes to generalize (Fortin, 1999). In this sense, the accessible population were the files of patients admitted to the HAN medicine service from January 1st to December 31st, 2018 and doctors from the service who were willing to participate in the study were selected. Given the logistical and temporal impossibility of studying the entire population, a sampling plan was designed to define the sample selection process. Thus, the selected sample follows the criteria of a non-probabilistic convenience sampling type, consisting of patients admitted to the Medical Service, which allowed the creation of a sample of 1008 clinical files based on the following criteria: patients with length of hospital stay equal to or greater than 7 days, hospitalized between January 1, 2018 and December 31, 2018 at the HAN Medicine Service and incorrectly completed files, incomplete files and evaded patient files were excluded. Regarding doctors, 8 agreed to participate in the study.

Data collection was carried out through the analysis of medical discharge notes and clinical files, using a spreadsheet that was built for this purpose containing sociodemographic data (age, sex, area of residence); diagnosis;

discharge destination (death, transfer, clinical discharge); date of clinical discharge; length of stay (date of entry and date of clinical discharge from the service. For the qualitative part, a semi-structured interview guide was used. The researcher and doctors decided by consensus on the day and time of the interviews, which were carried out in one of the service rooms in a reserved location with good privacy conditions. First, there was a brief presentation of the study and objectives, then the Free and Informed Consent form was read.

The answers to the questions during the interviews were written with prior authorization from the participants and lasted between 10 and 15 minutes. At the end of all interviews, they were transcribed in full, including recording details such as laughter and other gestures expressed by the participants. Considering that the reliability of the results represents the basis of qualitative research, in this study we sought to achieve the reliability and validity of the interviews through member checking, that is, after the full transcription of the interviews, the content of the transcriptions was returned participants to read it and check for possible flaws in the written content and thus contribute to the accuracy of the results (Birt et al., 2016).

To ensure the validity of the data, all interviews were transcribed in full and were subsequently re-read several times so that there were no transcription errors. Some methodological considerations were made to strengthen the validity of this study, including categorization triangulation, content analysis, and coding analysis (Andrew C. Sparkes, 2013). Two researchers worked separately to establish internal validity, that is, the main researcher and the second author independently after categorization analyzed the resulting coding to verify the validity of the data (Candela, 2019). For inter-coder

reliability, two independent codings were carried out from three interviews meeting the assumption of 10% to 20% of the total sample (Shi et al., 1998). The reliability calculation was done with Nvivo 12 through coding comparison, considering the line as the unit of analysis. The degree of agreement was calculated using Cohen's Kappa.90 in all categories, $p < .001$ (Siegel et al., 2016) showing very good agreement (Landis & Koch, 1977).

Taking into consideration, ethical and moral principles and reference to some codes of ethics that govern research on human beings, authorization was requested from HAN to carry out the study, then the project was submitted to the Cabo Verde National Health Research Ethics Committee -Green and authorized in its deliberation Number: 59/2019 (Annex 2), as well as the National Data Protection Commission, authorized by Deliberation No. 563/CNPD/2019. The research respected total anonymity in relation to the individuals researched and the information collected, and their physical, social, mental or moral integrity was not put at risk. The identity of the doctors was protected and referred to here as med 1, med 2, med 3....

STATISTICAL ANALYSIS

The data were treated statistically using Excel 2010 and SPSS version 26. The data were expressed as the mean, standard deviation and frequency (percentages), when appropriate. The Kolmogorov-Smirnov test was used to assess residual normality and the chi-square test for categorical variables. To analyze the differences in mean ages in relation to length of stay, it was evaluated using the non-parametric Wilcoxon-Mann-Whitney test with a significance level set at $p < 0.05$. To analyze the qualitative data, the content analysis proposed by Bardin was used, using the NVivo 12 program through a deductive approach, that is, the categories were defined a priori.

RESULTS AND DISCUSSION

To better understand the phenomenon under study, we present the results of the qualitative analysis of the study, and in the second part the presentation and discussion of quantitative data. To facilitate understanding of the data, they were analyzed in percentage numbers, represented in tables, creating a narrative text that interprets the data obtained.

ANALYSIS OF THE CAUSES ASSOCIATED WITH PROLONGED HOSPITALIZATION

For the initial presentation of the results, we chose to show the references of all categories with their subcategories, present in the documents and interviews analyzed. The summary in the form of a figure shown below leads us to reflect on the speeches presented in the interviews and documents analyzed in the present study. It allows us to understand the intersection that these discourses present when analyzed using aspects linked to health management and economics as a frame of reference.

Graph 1 allows us to see that among the three categories of analysis worked on, management difficulties clearly have a higher general concentration of coding than the others. And within the subcategories of financial resources, there is a greater concentration of codes compared to the subcategories of team training and physical structure. The overall performance of a hospital is inextricably linked to results whose support lies, firstly, in the quality of the acts and procedures carried out. To achieve the best results in terms of care, it is essential that there is a strategic commitment between the executive areas and the clinical and technical areas (Zitti et al., 2019).

Hospital Management is a set of practices applied by a professional who manages a hospital, public or private, with the aim of

keeping it operational and efficient (Erwin et al., 2019). It is known for its great complexity because hospital units have a significant range of areas of knowledge necessary for their functioning, which must be conducted appropriately so that health services are offered in the best possible way (Secchi, 2004). Being complex units, it is important to overcome the difficulties of hospital management, and as previously mentioned, it is the category that has the highest general concentration of coding.

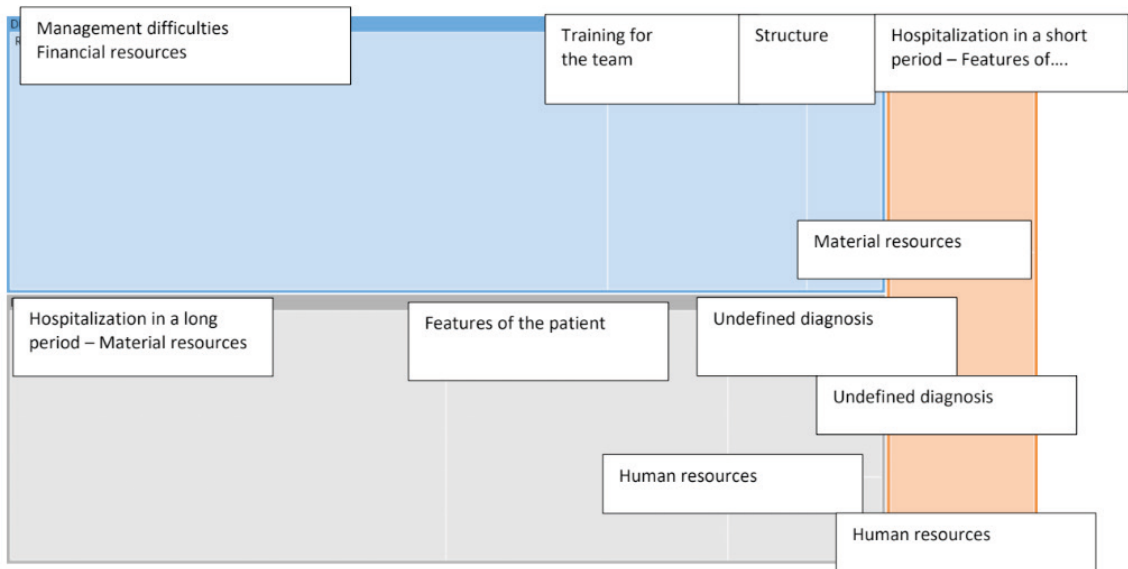
For complex contexts, such as the reality in most African countries, management difficulties can worsen when the availability of financial resources is limited. As it can be seen from the transcript:

[...] yes, because our hospital has a lack of resources and they intensify the length of stay (med 2)

The lack of resources is nothing new to anyone; on the contrary, it is known to society in general that the health sector in Cabo Verde is underfunded. This underfunding in general compromises the objectives advocated by health institutions in the country over the years, affecting the way health care is offered, from accessibility to quality of services. For our analysis context in which the decision to determine a length of hospital stay is partly up to the medical team, it made perfect sense to listen to those involved about the phenomenon under study given the decision difficulties associated mainly with training or lack of knowledge of the service's protocols. For example:

[...] failure to follow the admission protocol covers several pathologies on the part of doctors (med 3)

The clinical decision that best meets the interests of patients is always supported by the best available evidence, appropriate clinical judgment and clinical protocols. However, relatively low percentages of clinical protocols



Graph 1- Coding density

are based on well-designed randomized clinical trials. Thus, the basis for a good clinical decision and acceptable results must be based on: data derived from the most applicable and highest quality clinical study available and clinical maxims that is, acquired through experience which are, in turn, those ideas that are in accordance with a reasonable body of medical opinion (Sara et al., 2021).

The context of the Medicine Service, as well as most of the Hospital, is notable for the lack of follow-up in most cases of clinical protocols when they exist. And as it became clear from the transcription, this aspect interferes with clinical decision-making with repercussions on the length of stay, which in our opinion, can be explained by the lack of supervision or supervision as well as by certain specificities linked to organizational culture. There are several studies published internationally drawing attention to following clinical action protocols always supported by the best clinical decision (Barrett et al., 2016).

In relation to category 2 long hospitalization, we can see from the graph that of the four subcategories: undefined diagnosis, patient characteristics, human resources and material resources, the subcategory material resources

and patient characteristics were those with the highest number of codes. The term material resource in health cannot be dissociated from the management of material resources. For (Borges, 2013) the management of material resources is the specialized branch of administrative science that manages the essential items for the production of a good or service, the management of material resources has as its main objective to place the necessary resources in the production process with quality, in adequate quantity, at the correct time and at the lowest cost. This management of material resources includes: facilities management, equipment management, consumer goods management and by analyzing the transcripts we can verify that:

[...] high occupancy rate increases the difficulty of transferring patients from other services (BU to medicine) increased risk of hospital infection, unnecessary expenditure of resources...med 3

Requesting laboratory tests is an important means used by doctors to confirm diagnostic hypotheses, however, it has been shown that the absence to perform them may be related to issues involving the demand of the patient

being treated, even financial incentives (Yeh, 2014). For our study context, as was clear in the transcript report, these are not unjustified exams, but rather, a lack of conditions to carry them out, which in themselves affect the length of hospital stay given that patients are forced to wait a long time. time for carrying out the respective exams.

The third and final category of analysis was short hospitalization, whose subcategories were patient characteristics, material resources, undefined diagnosis and human resources. It is possible to see in graph 1 that of the four subcategories of patient characteristics and material resources, they were those with the highest level of condensation, followed by undefined diagnosis and human resources with a much smaller proportion. As previously mentioned, when interpreting the second category, the patient's characteristic appears again in the short hospitalization. This situation can be explained by the fact that in our study, the prevalence of advanced age is identified as a risk factor for comorbidities and a greater risk of prolonged hospitalization. It is interesting to note that despite being in different categories, the patient's characteristics in both categories had almost the same number of condensations.

The time that each individual remains hospitalized depends not only on their individual characteristics, but also on the organizational characteristics of the hospital, its valences and internal protocols (Roque et al., 2016). According to the author, we can deduce that for our study in question, the organization of the service made it possible to better manage situations linked to the characteristics of the patients and, in practical terms, provided a shorter length of stay for patients who were not elderly or with other comorbidities.

The average length of hospital stay is often

used as an indicator of hospital efficiency and as a measure of resource use (Strand et al., 2010). By analyzing the clinicians' statements, it is possible to verify that although everyone recognizes prolonged hospitalization as a problem for the service, there is a concern with the management of the service and the associated costs.

[...] Yes, it is the medical team's concern to reduce costs by reducing hospital stays.... med
8

It is clear from the doctors' statements that there is concern about the costs associated with prolonged hospitalization. However, if this concern is not accompanied by efforts, reforms and measures or actions to resolve the problem, it is of no use. As previously mentioned, changing the organizational culture and management of our services needs to be rethought taking into consideration, the current challenges facing the health sector, particularly the health economy. Indeed, after this small discussion, using the transcription of the interviews as analysis material, it is possible to verify that keeping patients hospitalized for longer can have several harmful effects, ranging from those related to the patient, such as psychological, physical, increased risk of infections associated with healthcare, as well as related to the service, such as service management and number of vacancies.

PROFILE OF PATIENTS ADMITTED TO THE MEDICINE SERVICE

In the period between January 1, 2018 and December 31, 2018, 1008 patients were observed, all from the Hospital's BU (Table 1).

Variable	Statistics
Gender	
Female	505 (50,1%)
Male	503 (49,9%)
Marital status	
Single	719 (71,4%)
Married	161 (16%)
Formal union	92 (9,1%)
Divorced	3 (0,3%)
Widower	32 (3,2 %)
Total	1008
Diagnosis	
I00-I99*	283 (28,1%)
J00-J99**	187 (16,6%)
A00-B99***	115 (11,4%)
N00-N99****	88 (8,7%)
Age	
Average	
Minimum	54
Maximum	13
Standard deviation	98
Days of hospitalization	
Average	12
Minimum	1
Maximum	369
Standard deviation	19,767

Table 1- Clinical and sociodemographic characteristics of patients admitted to the medical service

* Diseases of the circulatory system ** Diseases of the respiratory system *** Some infectious and parasitic diseases **** Diseases of the genitourinary system (ICD 10)

In relation to the most prevalent diagnoses in the period of analysis, it was verified that they were diseases of the circulatory system with 283 (28.1%), diseases of the respiratory system with 187 (16.6%), followed by infectious and parasitic diseases with 115 (11.4%), and diseases of the genitourinary system with 88 (8.7%). Regarding the comparison between the length of stay and the diagnosis, it is possible to verify in Table 2 that there is a

statistically significant association between the length of stay and the diagnosis.

Diagnosis	Period of hospitalization		p-value
	≤ 7 days (n=501)	> 7 days (n=507)	
I00-I99*	156 (30,8%)	127 (25,3%)	
J00-J99**	106 (20%)	81 (16,2%)	<,001
A00-B99***	69 (13,6%)	46 (9,2%)	
N00-N99****	30 (5,9%)	58 (11,6%)	

Table 2 - Comparison between length of stay and admission Diagnosis

* Diseases of the circulatory system ** Diseases of the respiratory system *** Some infectious and parasitic diseases **** Diseases of the genitourinary system (ICD 10)

In epidemiology, most rates, such as incidence, prevalence, mortality, and others, are strongly dependent on age, with increasing or decreasing risk depending on what is intended to be analyzed. Here, the associated comorbidities that directly or indirectly impact the length of hospital stay are more important here, which, in a certain way, proves our hypothesis that age is one of the factors associated with the length of hospital stay, that is, older patients stay longer in the hospital. hospital.

Regarding marital status, we can see that the majority of our sample is single with 719 (71.4%). Although there is no clinical interest in the association between marital status and days of hospitalization, it is interesting to note that the frequency of the number of single people can be an important variable in terms of family dynamics as well as the well-being of hospitalized people. There are several other factors that, despite being extensively studied in other studies, we were unable to evaluate in our study, as we did not have the necessary data for this purpose. However, given the length of hospital stay, we consider it important to make some considerations about them.

The analysis of the interviews allowed us to

understand through the clinicians' perception that prolonged hospitalization is a serious problem and significantly interferes with the management of the service as well as the management of the team. Age was considered an important factor with statistically significant influence on length of stay. The length of hospital stay is influenced by the severity of the pathology upon admission. In addition to this factor, increasing age, a greater number of previous hospitalization days and admission directly from the Emergency Department were predictors of prolonged stay.

CONCLUSION

It must be noted that the data collected allows us to confirm the inferences raised as well as the intended objective. It was found, although depending on the demands in terms of professional responsibilities, doctors and in general all health professionals in

their daily lives face enormous difficulties in providing care with some quality, and despite the great gains that has been achieved since independence, there is still a lot to be done in an important sector for the country's growth. Comorbidities represented an increased risk for prolonged hospitalization.

In this sense, responses to various levels of public action are necessary, as different global, national and local challenges require innovative planning and the formulation of appropriate policies. It is suggested the use of some tools that can be coupled to planning to understand the micro and macro environment, thus capturing the main opportunities that arise for the next steps of the Medicine Service of Hospital Agostinho Neto as well as the SNS through In addition, it will be possible to adequately construct strategic objectives to improve the health system.

REFERENCES

- Andrew C. Sparkes, B. S. (2013). *Qualitative Research Methods in Sport, Exercise and Health* (Routledge (ed.); 1st Editio). 2013. <https://doi.org/https://doi.org/10.4324/9780203852187>
- Barrett, B., Ricco, J., Wallace, M., Kiefer, D., & Rakel, D. (2016). Communicating statin evidence to support shared decision-making. *BMC Family Practice*, 17(1), 1–9. <https://doi.org/10.1186/s12875-016-0436-9>
- Birt, L., Scott, S., Cavers, D., Campbell, C., & Walter, F. (2016). Member Checking: A Tool to Enhance Trustworthiness or Merely a Nod to Validation? *Qualitative Health Research*, 26(13), 1802–1811. <https://doi.org/10.1177/1049732316654870>
- Borges, D. (2013). Gestão de conflitos - um desafio em enfermagem. In *Gestão em Organização de Saúde* (Vol. 3, Issue Série Monográfica Educação e Investigação em Saúde).
- Cabo Verde - MSSS, M. da S. e da S. S. (2019). *Relatório de Estatística 2018. I*, 1–164.
- Candela, A. G. (2019). Exploring the function of member checking. *Qualitative Report*, 24(3), 619–628. <https://doi.org/10.46743/2160-3715/2019.3726>
- Duarte, T. (2009). A possibilidade da investigação a 3: reflexões sobre triangulação (metodológica). *Sociologia*, 1–24. <http://repositorio-iul.iscte.pt/handle/10071/1319>
- Erwin, C. O., Landry, A. Y., Livingston, A. C., & Dias, A. (2019). Effective Governance and Hospital Boards Revisited: Reflections on 25 Years of Research. *Medical Care Research and Review*, 76(2), 131–166. <https://doi.org/10.1177/1077558718754898>
- Fortin, M.-F. (1999). *Fundamentos e Etapas no Processo de Investigação* (Lusodidacta (ed.)).
- Hawkes, N. (2012). Pressure on hospitals has led to worse care for older patients. *BMJ (Clinical Research Ed.)*, 345(September). <https://doi.org/10.1136/bmj.e6137>

Landis, R., & Koch, G. (1977). An Application of Hierarchical Kappa-type Statistics in the Assessment of Majority Agreement among Multiple Observers Author (s): J. Richard Landis and Gary G. Koch Published by : International Biometric Society Stable URL : <https://www.jstor.org/stab>. *Biometrics*, 33(2), 363–374.

Oliveira, M. A., Vellarde, G. C., & Sá, R. A. M. de. (2015). Entendendo a pesquisa clínica III: estudos de coorte. *Femina*, 716, 105–110.

Pocinho, R. (2019). Internamentos Prolongados numa Enfermaria de Medicina Interna. *Medicina Interna*, 26(3), 200–207. <https://doi.org/10.24950/rspmi/O/30/19/3/2019>

Rojas-García, A., Turner, S., Pizzo, E., Hudson, E., Thomas, J., & Raine, R. (2018). Impact and experiences of delayed discharge: A mixed-studies systematic review. *Health Expectations*, 21(1), 41–56. <https://doi.org/10.1111/hex.12619>

Roque, K. E., Tonini, T., & Melo, E. C. P. (2016). Adverse events in the intensive care unit: impact on mortality and length of stay in a prospective study. *Cadernos de Saúde Pública*, 32(10), 1–14. <https://doi.org/10.1590/0102-311x00081815>

Rufino, G. P., Gurgel, M. G., Pontes, T. de C., & Freire, E. (2012). Avaliação de fatores determinantes do tempo de internação em clínica médica. *Revista Brasileira Clínica Médica*, 10(4), 291–297.

Sara, J. D. S., Toya, T., Rihal, C. S., Lerman, L. O., & Lerman, A. (2021). Clinical decision-making: Challenging traditional assumptions. *International Journal of Cardiology*, 326, 6–11. <https://doi.org/10.1016/j.ijcard.2020.10.077>

Secchi, L. (2004). Drucker no ensino de administração: um alerta necessário. *Organizações & Sociedade*, 11(31), 13–23. <https://doi.org/10.1590/s1984-92302004000300001>

Shi, Y. L., Liu, J., David, V. J., Zhuang, J. C., & Ma, L. (1998). Application of mechanical and statistical models to the study of seismicity of synthetic earthquakes and the prediction of natural ones. In *Acta Seismologica Sinica English Edition* (Vol. 11, Issue 4). <https://doi.org/10.1007/s11589-998-0087-6>

Siegel, S., Castellan, N. J., & Grawe, P. H. (2016). *Applied Mathematics in the Humanities : Review of Nonparametric Statistics for the Behavioral Sciences by Applied Mathematics in the Humanities : Review of Nonparametric*. 9(1).

Yeh, D. D. (2014). A clinician's perspective on laboratory utilization management. *Clinica Chimica Acta*, 427, 145–150. <https://doi.org/10.1016/j.cca.2013.09.023>

Zitti, T., Gautier, L., Coulibaly, A., & Ridde, V. (2019). Stakeholder perceptions and context of the implementation of performance-based financing in district hospitals in Mali. *International Journal of Health Policy and Management*, 8(10), 583–592. <https://doi.org/10.15171/ijhpm.2019.45>

SUPPLEMENTARY TABLE

Age	Period of hospitalization		p-value
	≤ 7 days (n=501)	> 7 days (n=507)	
< 35 years	103 (20,3%)	93 (18,6%)	0,089*
35- 45	65 (12,8%)	85 (17,0%)	
46- 55	71 (14%)	85 (17%)	
56- 65	(17,8%)	94 (18,8%)	
> 60 years	178 (35,1%)	144 (28,7%)	

Comparison between prolonged length of stay (≤7 days) and short length of stay (>7 days) for age categories

* Chi-square test

Age	Period of hospitalization		p-value
	≤ 7 days (n=501)	> 7 days (n=507)	
Average	56,14	53,35	0,033*
Gender			
Female	249 (49,1%)	256 (51,1%)	0,528**
Male	258 (50,9%)	245 (48,9%)	
Marital status			
Single	360 (50,1%)	359 (49,9%)	0,821**
Married	79 (49,1%)	82 (50,9%)	
Formal union	47 (51,1%)	45 (48,9%)	
Divorced	1 (33,3%)	2 (66,7%)	
Widower	19 (59,4%)	13 (40,6%)	

Table 3 - Association between prolonged length of stay (≤7 days) and short length of stay (>7 days) for the study variables.

* Mann-Whitney test (U) **Chi-square test