

Management in health: new discipline in medicine course

Gestão em saúde: nova disciplina nos cursos de medicina

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ABSTRACT: *Introduction:* In order to keep up with the demands of contemporary times, the educational programs of medical courses should be revised. It would be interesting that, in addition to technical teachings, the curriculum included non-technical medicine precepts, which would allow doctors to perform better in their profession, precept reinforced by governmental resolution¹, and have a rewarding medical career. *Method:* Disciplines related to entrepreneurship offered in eighteen (18) among the country's twenty (20) main medical courses in the country were reviewed, aiming to detect the inclusion of disciplines that benefit the management of health services. *Results:* Of the 18 objects of the analysis, only eight (8) offered subjects in this area, totalizing twenty-eight (28) subjects, seven (7) of which are compulsory and twenty-one, (21) electives. The lack of content standardization was also verified in those courses that already teach such subjects, which makes it difficult to create norms or resolutions by the Ministry of Education (MEC) or by the Federal Council of Medicine (CFM) that would include, in fact, these contents in the curriculum. *Conclusion:* The teaching of management and entrepreneurship in the country, therefore, does not cover the entire national territory and, when it is present, fails to fully contemplate important precepts of the contemporary medical formation.

Keywords: Organization and administration; Medicine; Curriculum; Health.

RESUMO: *Introdução:* Para acompanhar as exigências da contemporaneidade, os programas pedagógicos, os quais contêm as exigências curriculares, dos cursos de medicina deveriam ser revistos. Seria interessante que, além dos ensinamentos técnicos, a matriz curricular incluísse preceitos não técnicos, também, do ponto de vista da medicina, que permitam aos médicos melhor desempenho na profissão, conforme reforçado por Diretriz governamental²¹, e uma carreira médica que se estenda para além da medicina. *Método:* Realizou-se uma análise das disciplinas relacionadas à gestão ofertadas em dezoito (18) dentre os vinte (20) principais cursos de medicina do país, segundo o Ranking Universitário da Folha 2019, com o objetivo de observar a inserção de disciplinas que beneficiem a gestão de serviços de saúde. *Resultados:* Dos 18 objetos de análise, apenas oito (8) ofertavam matérias nessa área, totalizando vinte e oito (28) disciplinas, sendo sete (7) obrigatórias e vinte e uma (21) eletivas. Verificou-se, ainda, a falta de padronização de conteúdo naquelas que já ministram tais disciplinas, o que dificulta a criação de normas ou resoluções pelo Ministério da Educação (MEC) ou pelo Conselho Federal de Medicina (CFM) que incluam, de fato, esses conteúdos nas grades curriculares. *Conclusão:* O ensino de gestão e de empreendedorismo no país, então, não contempla a totalidade do território nacional e, quando presente, não consegue contemplar plenamente preceitos importantes à formação acadêmica do médico contemporâneo.

Palavras-chave: Organização e administração; Medicina; Currículo; Saúde.

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INTRODUCTION

In its origin, in eighteenth century France, the concept of entrepreneurship referred to those who owned companies, production means, as explained by Braudel¹. Over the years, considering changes in the market and in the forms of interaction, the process of entrepreneurship has been re-appropriated, adjusting to the globalized world. With that, the contemporary view of the entrepreneurship process also reaches the public segment, no longer restricted to the private sector, like before, which can be observed in the definition proposed by Hisrich e Peters²: “The role of entrepreneurship in the economic development involves more than just increased production and per capita income; it involves initiating and make changes in the business and the society structures”. The act of entrepreneurship involves efforts and risks, but it has the potential to create beneficial novelties, as shown by Baggio and Baggio³. With that, the contemporary entrepreneur, as highlighted by Vale⁴, is subjected to new challenges, but still dependent on typical skills, such as the ability to innovate and proactivity, generating positive results to society.

Even with the many transformations and evolutions that occurred, Martes⁵ explores the clash between entrepreneurship and traditionalism. The same can be said of medicine, which has significantly evolved, and yet remains with a teaching profile that is not completely adjusted to the current reality. The student's profile, in fact, has shown signs of changes, as it may be witnessed by the formation of the junior enterprise “Medicina Jr.”, by students of the University of São Paulo Medical School (USP)⁶, and by the creation of the “Entrepreneurship, Medical Career and Health Management League”, by students of the Federal University of Rio de Janeiro Medical School (UFRJ), at the end of 2017. The teaching profile during graduation years, however, did not follow these changes, probably remaining outdated for the modern conjuncture: entrepreneurship, management and administration of the medical career and usually neglected themes during the school years of medicine.

However, management skills and the entrepreneur profile, as demonstrated by Hisrich and Peter's considerations, are essential in a globalized scene: both personally and professionally, they ensure more success. Proof of that is the success obtained by Stanford University, which, by promoting the entrepreneur profile and the innovation, allowed many success cases to flourish, as shown by the Eesley and Miller⁷ analysis. Teaching shouldn't be just about disciplines on the subject, but those should have the quality of having the students as the main focus, a concept further explored by Fayolle⁸. However, Sakhri⁹ argues that, historically, that mindset barely permeated the academic environment of medicine.

As for the personal sphere, financial organization

and proper monetary management ensure better conditions nowadays, making it possible to pay eventual debts faster, mitigate the contraction of further debts and more conscient consumption. As for the professional field, the exercise of medicine is normally divided between public and private sectors. For the first one, the doctor should have management skills, organizing patient flows and optimizing scarce resources. For the latter, it is crucial to know how to be an entrepreneur, so that both gains and productivity are maximized. That way, even if they are able to perform clinical activities after at least 6 years of academic study and required extracurricular experiences, the young doctor still meets great obstacles. That way, it's understood that the teachings of entrepreneurship and management, both for personal and business purposes are insufficient at medical school in the national scope, since it does not include all the necessary concepts for a complete formation. For that reason, it would be interesting to review the proposed curriculum, in order to ensure a broader scope of teachings on non-technical subjects. Following this agenda, we proposed to evaluate the presence of subjects that benefit management at the main medical schools of Brazil.

METHOD

Type of study

This article is an analytical descriptive study of the ecological kind.

Ethical considerations

The information here present are public, and available at each school's websites, or were provided by the respective graduation academic secretaries. There were no ponderations of the respective faculties regarding the evaluated material. There were no studies with living beings conducted, so there is no need to obtain approval from ethical committees.

Identification of the subjects

In order to write the present article, the curriculum of 18 out of the 20 main medical schools, according to Folha's University Ranking of 2019 (RUF 2019), made by the newspaper *A Folha de São Paulo* (<https://ruf.folha.uol.com.br/2019/ranking-de-universidades/principal/>), were analyzed. The stipulated number is subjective of the authors. The search for subjects was made at the schools' websites, and when they could not be found, the graduation academic secretaries were reached by e-mail. The search for subjects were based on the terms: management, entrepreneurship, innovation, policy, economy, administration, market, services and quality. A similar study was conducted by Niccum et al.¹⁰, but adjusted to the North-American scenario.

Pedagogical characteristics

From the analysis the subjects that benefit health service management were raised, as well as their respective syllabus' and general objectives. Many aspects were compared, whenever available: workload, number of credits, electivity or mandatory and semester or year recommended for the class to be taken (Table 1), which are interesting indicators of the importance attributed to these subjects. Pedagogical projects were also compared, the pedagogical projects of which derived the presence or

absence of previously stipulated parameters, considered by the present paper crucial for the professional exercise of medicine. Those data were organized on a table (Table 2), so that it was possible to observe in a clear and didactic form the profile of the teaching of medicine and management at the main medical schools of the country.

In Table 1, we find a description for each subject analyzed, in which we can observe the number of credits, when available, the workload, whether the subject is elective or mandatory and the semester recommended for the class to be taken, in case there is a recommendation.

Table 1: Profile of the subjects currently offered

University	Code	Name	Credits	Workload (Hours)	Electivity	Semester
USP	MSP4053	Innovation and entrepreneurship in medicine	1	15	Elective	2
	MSP4040	Innovation & Entrepreneurship in Health	1	15	Elective	3
	MSP4061	Entrepreneurship and Innovation in Health	1	15	Elective	3
	MSP4016	Notions on Medicine Management I (Clinic)	1	15	Elective	3
	MSP4017	Notions on Medicine Management II (Hospital and Communications)	1	15	Elective	6
	MSP4026	Career Management	1	15	Elective	6
UNICAMP	-	-	-	-	-	-
UFMG	MP5005-DIG	Health and Planning Policy	5	75	Mandatory	8
	MP5020-DIG	Health System Management	2	30	Mandatory	11
	MPS025-DIG	Health Economics	2	30	Elective	-
UNIFESP	7870	Health Services Economics and Management	-	36	Elective	-
	8932	Health and Nursing Management in Primary Health Care	-	36	Elective	-
	8723	Quality Tools for Health Services Management	-	36	Elective	-
	8739	Health Policy Governance	-	36	Elective	-
UFRGS	MED05519	Health Administration and Planning	4	40	Mandatory	6
	ADM01101	Introduction to Management	4	60	Elective	-
UFRJ	ISC303	Health Administration and Planning	2	60	Mandatory	6
	FMI481	Administration of Clinics and Consultant	2	55	Elective	-
UERJ	-	-	-	-	-	-
UNESP	-	-	-	-	-	-
UFPE	MEDC0088	Innovation and Entrepreneurship	4	60	Elective	-
UFF	-	-	-	-	-	-
UFPR	MI084	Medical Administration	2	40	Mandatory	8
	MC024	Labor Market and Legal Responsibility of the Doctor	1	20	Elective	8
	MS122	Organization of Systems and Services in Health	-	40	Mandatory	5
UNB	-	-	-	-	-	-
UEL	-	-	-	-	-	-
UFRN	DSC0125	Management of Health Services Quality	-	30	Mandatory	8
	ADM0501	Business Management	-	60	Elective	-
	ADM0503	General Theory of Administration	-	60	Elective	-
	ADM0523	Entrepreneurship and Business Plan	-	60	Elective	-
	ADM0527	Organizational Quality	-	60	Elective	-
	ADM0541	People Management I	-	60	Elective	-
	ADM0542	People Management II	-	60	Elective	-
PUCRS	-	-	-	-	-	-
UEM	-	-	-	-	-	-
UFSCAR	-	-	-	-	-	-
UFPEl	-	-	-	-	-	-

Acronyms: USP: University of São Paulo; UNICAMP: Campinas State University; UFMG: Federal University of Minas Gerais; UNIFESP: Federal University of São Paulo; UFRGS: Federal University of Rio Grande do Sul; UFRJ: Federal University of Rio de Janeiro; UERJ: Rio de Janeiro State University; UNESP: Júlio de Mesquita Filho São Paulo State University; UFPE: Federal University of Pernambuco; UFF: Federal Fluminense University; UFPR: Federal University of Paraná; UNB: University of Brasília; UEL: Londrina State University; UFRN: Federal University of Rio Grande do Norte; PUCRS: Rio Grande do Sul Pontifical Catholic University; UEM: Maringá State University; UFSCAR: Federal University of São Carlos; UFPEl: Pelotas Federal University.

Table 2: Comparative analysis between current syllabus and the proposed subjects

University	Subject		Suggested subjects									
	Code	Name	1	2	3	4	5	6	7	8	9	10
USP	MSP4053	Innovation and entrepreneurship in medicine							X	X	X	
	MSP4040	Innovation & Entrepreneurship in Health							X		X	
	MSP4061	Entrepreneurship and Innovation in Health							X			
	MSP4016	Notions on Medicine Management I (Clinic)			X		X					
	MSP4017	Notions on Medicine Management II (Hospital and Communications)		X	X		X	X				
	MSP4026	Career Management	X		X		X	X				X
UNICAMP	-	-	-	-	-	-	-	-	-	-	-	-
UFMG	MP5005-DIG	Health and Planning Policy						X				
	MP5020-DIG	Health System Management					X	X				
	MPS025-DIG	Health Economics	X									
UNIFESP	7870	Health Services Economics and Management					X	X	X			X
	8932	Health and Nursing Management in Primary Health Care						X				
	8723	Quality Tools for Health Services Management					X	X		X		
	8739	Health Policy Governance						X				
UFRGS	MED05519	Health Administration and Planning						X				X
	ADM01101	Introduction to Management										X
UFRJ	ISC303	Health Administration and Planning					X	X				
	FMI481	Administration of Clinics and Consultant					X			X		
UERJ	-	-	-	-	-	-	-	-	-	-	-	-
UNESP	-	-	-	-	-	-	-	-	-	-	-	-
UFPE	MEDC0088	Innovation and Entrepreneurship							X		X	
UFF	-	-	-	-	-	-	-	-	-	-	-	-
UFPR	MI084	Medical Administration			X		X	X				X
	MC024	Labor Market and Legal Responsibility of the Doctor			X							
	MS122	Organization of Systems and Services in Health						X				
UNB	-	-	-	-	-	-	-	-	-	-	-	-
UEL	-	-	-	-	-	-	-	-	-	-	-	-
UFRN	DSC0125	Management of Health Services Quality					X	X				
	ADM0501	Business Management	X	X			X	X				X
	ADM0503	General Theory of Administration	X				X	X				X
	ADM0523	Entrepreneurship and Business Plan									X	
	ADM0527	Organizational Quality					X	X				
	ADM0541	People Management I				X						
	ADM0542	People Management II				X						
PUCRS	-	-	-	-	-	-	-	-	-	-	-	-
UEM	-	-	-	-	-	-	-	-	-	-	-	-
UFSCAR	-	-	-	-	-	-	-	-	-	-	-	-
UFPEl	-	-	-	-	-	-	-	-	-	-	-	-

Notes: 1: Financial Management; 2: Basic Marketing Concepts Applied to Health; 3: Career Management; 4: People management; 5: Private Health Services Management; 6: Public Health Services Management; 7: Innovation; 8: New Technologies Applied to Health; 9: Business Plan; 10: Basic Management Principles.

In Table 2 we find a correlation between the analyzed subjects and the presence or absence of the subjects proposed by this study as essential for a good medical training.

RESULTS

Preliminary analysis

1. For the analysis, both public and private health services were considered entrepreneurship. For the subjects that present no specification on public or private sector in the pedagogical project, both sectors were considered contemplated.

2. It should be stressed that some subjects offered contents related to marketing, though not restricted to medical professionals, which have a few specifics, according to CFM standards. However, it was taken into account that the professional could adjust their learnings to the health scenario.

3. Regarding new technologies, both clinical and surgical instruments were considered tools for administrative use, just as computer programs that aid in management.

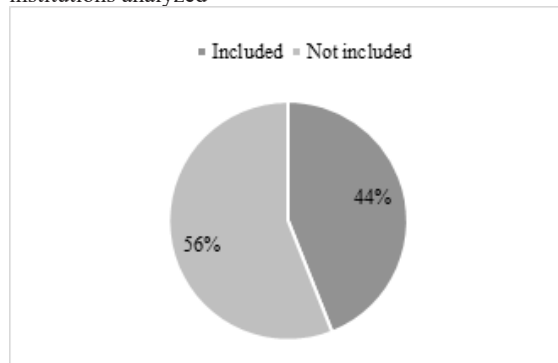
4. As for financial administration, both personal and professional spheres were considered.

5. For business plans, both theoretical activities and simulation practices were considered.

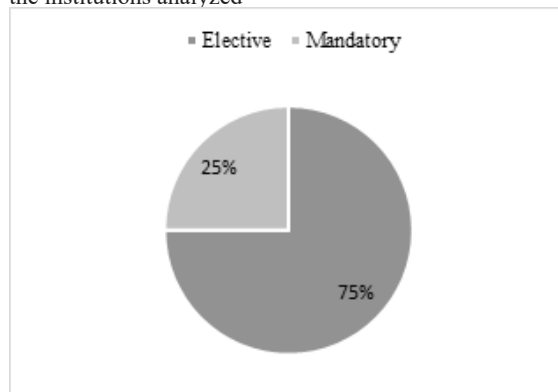
Percentage analysis

First of all, the ratio between the amount of schools that offer courses on management and entrepreneurship and the amount of those that don't, should be observed: 8 of them offer courses and ten (10) of them don't. Therefore, among those considered the best medical schools of the country, we have $8/18 = 44.44\%$ that include these concepts in their curriculum. Other than that, out of 28 subjects available, 7 are mandatory and 21 are elective. Hence, the percentage of mandatory subjects is $7/28 = 25.00\%$ and the percentage of elective subjects is $21/28 = 75.00\%$.

Graphic 1: Profile on the inclusion of courses that benefit management and entrepreneurship in the curriculum of the institutions analyzed



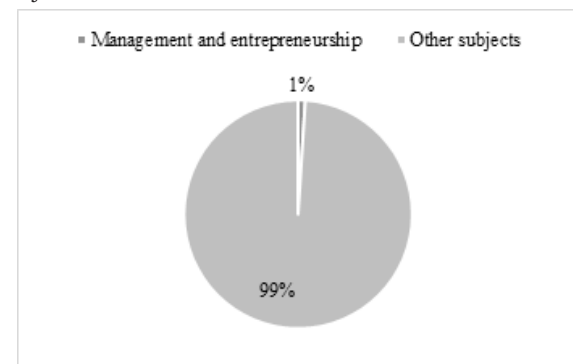
Graphic 2: Mandatory or elective ratio between subjects that benefit management and entrepreneurship in the curriculum of the institutions analyzed



Average workload

From Table 1 it may be derived an average workload for a subject offered. By combining the workload presented both for mandatory and elective subjects, we have a total of 1134 hours coursed. By dividing that number for the number of subjects considered, 28, we have an average of 40,5 hours per subject. By the same reasoning, we may stipulate an average for the number of subjects offered by the 18 aforementioned schools, reaching a total of 1,55 subjects per school. Therefore, by multiplying the number of hours by the total of subjects offered, $40,5 \times 1,55$, we have 62,77 hours coursed. By the rules stipulated in resolution¹¹ by the Ministry of Education, medical school must comprise 7200 hours coursed. As such, the teaching of management and entrepreneurship would correspond to, in average, only $62,77/7200$ hours of the course, or, 0,87% of the total time invested in training a medical professional.

Graphic 3: Average time invested in courses that benefit management and entrepreneurship and time invested in other subjects of the curriculum ratio



Proportions for each suggested subject

Considering only the subjects offered, we observe the following proportions for each subject proposed in Table 2:

1. Financial Management: $4/28 = 14.28\%$;
2. Basic Marketing Concepts Applied to Health: $2/28 = 7.14\%$;
3. Career Management: $5/28 = 17.86\%$;
4. People Management: $2/28 = 7.14\%$;
5. Private Health Services Management: $13/28 = 46.43\%$;
6. Public Health Services Management: $16/28 = 57.14\%$;
7. Innovation: $5/28 = 17.86\%$;
8. New Technologies Applied to Health: $3/28 = 10.71\%$;
9. Business Plan: $4/28 = 14.28\%$;
10. Basic Principles of Administration: $7/28 = 25.00\%$.

Regionalization, geographic distribution and university profile

Among the 18 universities found in Tables 1 and 2, 12 are situated in their state capitals or the Federal District:

USP, UFMG, UNIFESP, UFRJ, UERJ, UFPE, UFRN, UFRGS, UFPR, PUCRS and UNB.

Table 3: Distribution of the educational institutions by region

Midwest	North East	North	South East	South
UNB	UFPE		USP	UFRGS
	UFRN		UNICAMP	UFPR
			UFMG	UEL
			UNIFESP	PUCRS
			UFRJ	UEM
			UERJ	UFPEl
			UNESP	
			UFF	
			UFSCAR	

According to RUF 2019, it is possible to observe clear predominance of the South East and South regions among the medical schools considered the best.

Among the institutions analyzed, only PUCRS is not a public university, being private philanthropic and confessional. The rest of them are public universities, both federal and state, therefore, they are free.

DISCUSSION

In addition to the necessary technical knowledge to the actual practice and the performance of medicine focused on the person and the malady that is not discussed in this paper, medical professionals also need non-technical foundations to support their education. These should be geared towards the management of health services and projects, reaching for better performances of the activities desired, as well as personal management, and time management. Mastering those concepts tend not only to increase productivity¹² and reduce losses, but also leads to better quality of life, both personally and professionally, less stress and consequently better mental health. From better time management, for instance, a person can have better quality of life, such as better sleeping patterns, and fatigue reduction¹³.

From the observation of the respective pedagogical projects, it was possible to see different approaches, including important aspects, at many times converging with those considered crucial by the present article. However, most of the courses, even those that offered more subjects geared towards management and entrepreneurship, fall short of the necessary knowledge to the medical day to day. In other words, entrepreneurship is scarce in medical schools, whether for a lack of proper professional, lack of financing or the faculties' resistance to changes in curriculum¹⁴. Despite all that, Martens et al.¹⁵ have shown that the student body, even when they're not med students, want teachings on entrepreneurship, are interested in identifying opportunities, business plans, leadership,

decision-making process and starting companies and businesses. Therefore, entrepreneurship, as far as the students are concerned, converges with the propositions of Franco et al.¹⁶, according to whom "it is common to recognize entrepreneurship as the start of new company or a business. However, that definition alone is not enough to explain that phenomenon".

The comparative analysis between the mandatory courses and the elective subjects of the curriculum grids analyzed has shown a 3:1 ratio. So, we can observe that the responsibility to learn about that is largely transferred to the student, since they can choose not to take most of the subjects offered, especially when there are no practical teachings, according to Vieira et al.¹⁷. In a context where daily life is already saturated by the many academic commitments, such as classes, exams, internships and seminars, it is common that the student chooses not to take the electives, even those that generate interest and possible advantageous knowledge to their professional lives, such as longer companies' longevity, due to better management¹⁸, claiming they don't have enough time to fulfill all these commitments. So, it is clear that the ratio encountered during the analysis of the current grids does not meet the needs imposed by the market, which could be mitigated by making some of the electives mandatory.

Another interesting derivation from the analysis is the average time spent on the subjects offered. It was observed that less than 1% of the time dedicated to the medical education is invested in studying entrepreneurship and management. Of course, the theoretical-practical teachings of medicine, such as anatomy, physiology and pathology are essential¹⁹, in a manner that it is not interesting to make comparisons to the hours spent on those subjects. However, in a scenario where a managing and entrepreneur view grow increasingly important to the professional, in addition to a six-year minimum education, it would be interesting to invest more time in teaching the subjects proposed by this article. An interesting way to implement the teaching of organization and administration would be by diluting these learnings over the years in a gradual and continuous manner.

Still, from Table 2, in which the presence or absence of each offered subject proposed was analyzed, it was possible to establish proportions of inclusion for each subject. The proportions found show that most of the subjects suggested as important for better preparing the medical student are not properly contemplated. Of course, there are subjects with more intersection, such as Private Health Services Management and Public Health Services Management, but there are also those that are not largely covered, such as Basic Marketing Concepts Applied to Health. When you calculate the percentages met, we obtain 21,78%, showing that most subjects are not well explored by the courses offered by the analyzed schools. With that, it is understood that the already scarce subjects available

do not offer a broad approach to the relevant themes for a better medical education.

Hisrich e Peters²⁰ proposed three entrepreneur skills: technical, administrative and personal. The first skill relates to the execution of tasks, so it requires specific knowledge, the second refers the creation and caution necessary to managing a company. The third is about the individual and their qualities, like the leadership profile. Both technical and administrative can be taught, whether technically or in theory, as already done in some of the subjects proposed by this article, while personal can be stimulated and guided by the academic body. Therefore, medical education has the power to transfer to the student body an entrepreneur profile, which does not occur, or only partially occurs today.

Limitations

Historically, public universities hold a prominent position in the national scenario. That way, in RUF 2019, which was used as basis for choosing the universities to be considered, it can be observed the absolute predominance of these institutions, in a way that it does not necessarily represent the reality of the main private universities.

Furthermore, it can also be noticed the predominance of the South East region in the list of universities, as a result

of social economic reasons not contemplated by this study.

Finally, the choice to look at 20 universities in total was arbitrary of the authors, with no previous criteria. Among them all, two could not be analyzed due to lack of information on their web platform or lack of responses from their respective departments after two attempts to contact them, over the course of a month.

CONCLUSION

It is possible to notice, then, that the teaching of entrepreneurship and management in medical school is still in the early stages in Brazil. When they are part of the curriculum grid, the theme is little explored, whether on account of the duration of those scarce subjects or their electivity, so that the students need to look for alternative sources to learn, such as academic leagues, when they exist.

Furthermore, from the analysis made in this article, the already scarce teaching is concentrated. Fifteen out of the eighteen schools analyzed are located in the South or South East regions, and seventeen of those are public universities. With that, once more it can be perceived the limitations inherent to the medical education in the country.

Therefore, a reformulation of the curriculum grid is necessary to the medical schools.

Author's participation: *Eric Slawka* – Creator of the article, gathering of data and editor. *Mário Emmanuel Novais* – Advisor and proofreader in the construction of the article

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