

New National Curricular Guidelines of medical courses: opportunities to resignify education

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The new National Curriculum Guidelines aim at restructuring and adapting medical curricula. The objective is to conduct a critical-reflective analysis of the restructure of a medical course's curricular matrix. This action research was conducted at a Brazilian federal university. The material was analyzed using the discourse analysis method. Among the results, the proposal of a curriculum that values life and transfers the biomedical paradigm to incorporate other dimensions in healthcare is highlighted. The need to strengthen a curricular matrix based on social demands and preferably focused on primary care is indicated. The establishment of longitudinal and transversal relationships among the competency areas of the 2014 National Curricular Guidelines and the curricular components is proposed. The intention is to foster the understanding of determinants and relationships between diseases and the communities' ways of living.

Keywords: Medical education. Curriculum. Primary healthcare. Collective health. Comprehensive care.

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Introduction

The 21st century exposed the health systems' weakness in dealing with three main problems: parasitic-infectious diseases, chronic non-transmitted diseases and external causes. It also exposed the mismatch between medical education and the population's main health needs¹.

Part of this inconsistency between professional education and health needs is related to a historical process of curricula development that is often decontextualized, fragmented and focused on technique. At least three generations of important educational reforms can be highlighted under this context². The first one was a paradigmatic change unleashed after the publication of the Flexner Report in the early 1920s. The report consolidates education in hospital environments as privileged scenarios of medical practice².

The second reform introduced pedagogical innovations, such as Problem-Based Learning (PBL), active methodologies and work in small groups in the education of health professionals. Medical schools were particularly encouraged to break with hierarchical structures and traditional teaching models in order to adopt student-centered teaching and learning methodologies³.

The third generation of changes gains strength in educational systems based on the concept of social accountability. This term still lacks a proper translation into Brazilian Portuguese, since it is not restricted to its direct translation, which means "social responsibility." It is related to a commitment with accountability, a relationship that begins by welcoming social and healthcare concerns of communities, regions or nations in order to guide teaching, research and service activities⁴. Therefore, it is characterized by the educational institutions' need for engagement in order to improve the health systems' performance, adapting essential professional competencies to specific contexts and scenarios¹.

In Brazil, the Healthcare Reform can be considered the forefront of this new paradigm, since it contributed to the institutionalization of the education of human resources for health through the Federal Constitution. According to the Organic Health Law no. 8080/90, the ordinance of the education process of these professionals should be guided by the Brazilian National Health System (SUS) according to the population's most prevailing health needs⁵.

Aligned to this aspect, conformation of Collective Health becomes important, based on criticisms to the biomedical education model. It is instituted as an expansion of a paradigm that incorporates a biopsychosocial perspective of individuals and extrapolates its pedagogical conception to beyond hospital walls, guiding experiences and educational views also towards communities⁶.

Over the last three decades, several significant actions were suggested in the form of documents and legislation in Brazil (Figure 1). These initiatives have been contributing to foster the debate on the education of health professionals⁷⁻¹⁴.

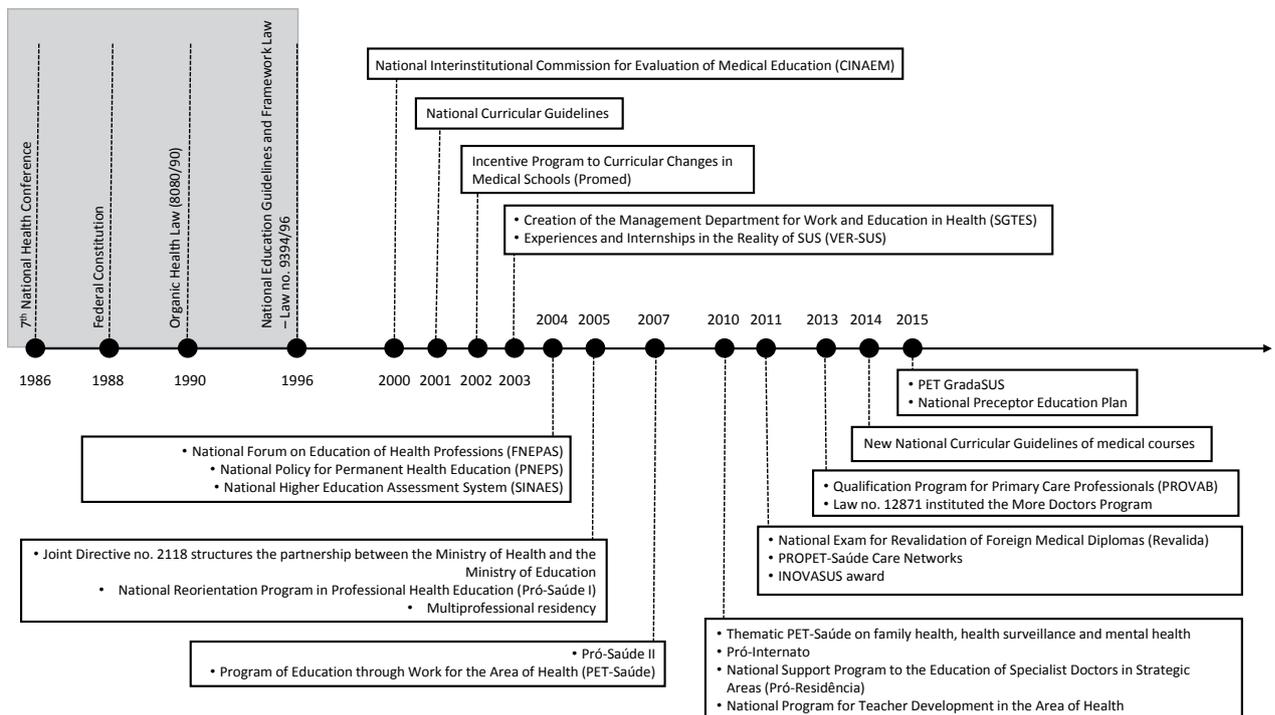


Figure 1. Historical milestones of medical education's guiding public policies

Source: created by the authors.

A great milestone to be highlighted is the publication of the National Curricular Guidelines of medical courses, in 2001⁸, which already indicated a concern towards a general, human, critical and reflective education. Additionally, they suggested the division of the curriculum's competencies into six topics: healthcare, decision making, communication, leadership, administration and management, and permanent education⁸.

In 2013, the Brazilian government launched the More Doctors Program through Law 12871. The program sets guidelines to reorient undergraduate and postgraduate medical education. Among its objectives, the establishment of new parameters to medical education in the country is highlighted^{9,10}.

In 2014, the new National Curricular Guidelines of undergraduate medical courses were published¹¹. Their scope includes the need to qualify future professionals to work in different care levels. Additionally, they reinforce the commitment with human dignity, comprehensive care and transversality of practice guided by social determination of the health-disease process¹¹.

Unlike the 2001 National Curricular Guidelines, their 2014 version emphasizes Collective Health. They lay out key planned and conducted actions based on demographic, epidemiological, healthcare and environmental data, considering dimensions of risk and vulnerability of collectivities. They also divide competency areas into three thematic axes: healthcare, health management, and health education¹².

Undergraduate medical courses throughout Brazil have made efforts towards restructuring and readapting their curricula in order to meet the new National Curricular Guidelines. This manuscript's starting point is based on the need to redesign the current curriculum of a medical school in the Brazilian northeastern region, aimed at adapting it to the new 2014 National Curricular Guidelines. After 17 years of its last change, the current curriculum of this school requires modifications. The reasons for this change are: predominance of scenarios of practice in hospitals, insufficient inclusion of theoretical and practical activities related to Collective Health in general and specifically primary healthcare, and low planning and execution of activities guided towards social determination of the health-disease process. In this context, the object is to conduct a critical and reflective analysis of the restructure process of the curricular matrix of a Brazilian northeastern federal public university's medical course.

Methodology

The adopted investigation methodology was a participatory action research. It aims at understanding and intervening in the situation in order to change it. This investigation process is conducted through a continuous spiral of action and reflection¹³. The phases of the action research can overlap. The initial plans can sometimes change according to the reflection processes the researchers and participants go through¹⁴.

In this study, the participatory action research was outlined in three moments: creation of a theoretical framework, practical action and permanent assessment/reflection. All moments of the design process of a new curricular matrix of the medical course focused on Collective Health in light of the 2014 National Curricular Guidelines were part of a spiral movement and were experienced in it, according to the participatory action research's premises¹⁴.

The investigation scenario was the undergraduate medical course of Universidade Federal do Ceará, in the Brazilian city of Fortaleza. The university was a pioneer in medical education, being the first medical school of the state. The course was considered a reference to the organization of the curricular matrices of the other courses that followed it. Additionally, the university is the higher education institution that offers more seats in the state¹⁵.

Administratively speaking, the School of Medicine is divided into eight departments, such as the Community Health Department, which is the analytical object of this article. This department is co-responsible for the pedagogical organization of the only two mandatory longitudinal curricular components that are present in all semesters of the course: Primary Healthcare and Personal Development. It is also responsible for coordinating the Community Health Residency, focused on primary care. The department is connected with the fields of Epidemiology; Social and Human Sciences; Health, Work and Environment; and Health Policy and Planning.

The research subjects were teachers and coordinators of longitudinal modules offered by the Community Health Department. Technical servants who contribute to undergraduate teaching, such as nurses, doctors and educators, were also part of the study.

The research was conducted from March 2015 to April 2016. During this period, four thematic seminars were held. Among them, three were determined according to preestablished competency areas of medical education: I - Healthcare; II - Health management; and III - Health education¹¹. They aimed at discussing the new guidelines in order to lead curricular changes that can go beyond a simple pragmatic exercise. The fourth seminar was held with the objective of presenting the systematization's results to the Community Health Department's board in order to collectively validate them. The number of participants varied in each seminar. However, at least one representative of each module was present in all meetings, accounting for at least seven participants in each moment. Seminars were facilitated by an educator with experience in redesigning undergraduate health course's pedagogical projects.

The following guiding questions were used to conduct the seminars: "What to teach?", "Why teaching?", "What to teach for?" and "Whom to teach for?" Based on these questions, each participant was encouraged to individually question and write their ideas about their current pedagogical practice using the competency areas in their three thematic axes: healthcare, health management and health education. The new 2014 National Curricular Guidelines were used as an analytical reference model. The objective was to promote an ontological reflection about the nature of the teaching and learning process, knowledge production, culture and society¹⁶.

The results of each seminar were transcribed, systematized, categorized and presented in the subsequent seminar, generating new reflections, debates, discussions and production. Therefore, participation was fostered in three moments: individual, small groups and plenary. The thematic categories¹⁷ were organized in accordance with the 2014 National Curricular Guidelines following the areas presented in the resolution: healthcare, health management and health education¹¹. They were subsequently analyzed and discussed in light of the scientific literature.

Discourse analysis was used to analyze the qualitative material. This method aims at "critically describing, explaining and assessing the processes of production, circulation and consumption of senses"¹⁷ (p. 7). Therefore, in discourse analysis, not only what is said or evidenced by the text matters. It also aims at understanding how a symbolic object produces senses and how it is invested in significance to and by subjects, since every speech is a form of action¹⁸.

In order to do so, discourses essentially need to be understood and interpreted as determinant social practices and social practices determined by the sociohistorical context. After all, discourse analysts are not placed out of history, symbolism or ideology. They are positioned as to be able to contemplate and act upon the sense production process and their conditions¹⁸. This is the only way they are capable of interpreting and reinterpreting their textual corpus¹⁷. It was also agreed upon among the participants that speeches from seminars would not be dealt with in an individual way. On the contrary, they would be analyzed as a collective product of each meeting, being identified by the letter "S" followed by the seminar number.

This research was approved by the Research Ethics Committee of Universidade Federal do Ceará under opinion number 04350712.4 0000.5054/2013.

Results and discussion

Medical education's competency areas and their interface with Collective Health

In order to begin the critical and reflective analysis of the 2014 National Curricular Guidelines, the propositions of each competency area and their key actions were questioned. This decision was made because these sections contain possibilities of transforming the guidelines into relevant, adequate and timely effective practices in medical education¹¹.

Healthcare

Regarding the first competency area, healthcare is structured into two subareas: care for individual health needs and care for collective health needs. Even under the scope of care for individual needs, the group of teachers identified relevant contributions to Collective Health in medical education. Among them, the resignificance of the biomedical paradigm is highlighted, moving towards a shared management of clinic with patients, repositioning them as protagonists of their own care process:

Medical competency is not only technical. It is necessary to leave the biological axis and expand the view to patients, to their decisions about their lives, their conditions of dealing with their diseases. This can become real if we think and work towards preparing professionals to become more human, connecting human education with learning, knowledge theories, cultural aspects. (S2)

However, overcoming the biomedical paradigm to focus on a person-centered transition does not seem to be a consensus in professional practice and scientific literature. The doctor-centered paradigm is still oftentimes considered an element of power. Authors as Bursztyń¹⁹ highlight that care for individual needs is a prominent domain in doctors: "Clinic, called Individual Healthcare here, is an undeniable space of leadership to doctors. Collective Health, called Care for Collective Health Needs here, is a domain in which doctors cooperate with other professionals"¹⁹ (p. 15).

Under this scope, strengthening a care education generally focused on caring for diseases in their bodily manifestation is prioritized. It is also worth highlighting that fostering an anachronistic thought that suggests a hierarchy of medical professionals towards other health categories also seems counterproductive, particularly when the complexity and multicausality of problems that span the health-disease binomial are taken into consideration.

However, delimiting clinic as an undeniable space of leadership of doctors goes against the guidance contained in the new National Curricular Guidelines' framework. According to the document, the following should prevail in medical education:

interprofessional teamwork with the development of a horizontal and shared relationship, respecting the needs and desires of the person under care, the family and the community, their understanding of what being sick means, the identification of common objectives and responsibilities between health professionals and users in healthcare¹¹. (p. 2)

Another confluence point identified between the new 2014 National Curricular Guidelines and Collective Health is the development of shared therapeutic plans. These plans provide for the discussion of the treatment with the person under care, considering the use of popular health practices¹¹. In this perspective, a theoretical alignment with the contributions of Individual Therapeutic Projects (PTS) was identified^{20,21}.

PTS is a series of proposals and articulated therapeutic conducts for an individual or a group resulting from the collective discussion of an interdisciplinary team²¹. It is an important tool, since it creates opportunities for interdisciplinary dialogs among health teams and suggests actions that go beyond fighting diseases:

We believe medical students are able to articulate their practice with that of other health professionals, services and institutions, being able to understand the disease's complexity and that several hands are necessary to obtain the desired result. Health assistance is provided by a team, not by only one professional. (S1)

The proposal of a group of teachers and technicians to redesign the curricular matrix of the undergraduate medical course of Universidade Federal do Ceará was towards strengthening the expanded clinic. The expanded clinic is considered an important strategy to overcome the fragmented point of view. This essentially curative and hospital-centered view is still the basis of education in several medical schools²².

In this context, confluence among clinic and Collective Health is an opportunity. Despite acknowledging that both have their own spaces of domain or specific scientific fields²³, the objects of their praxis converge towards the responsibility for healthcare.

Based on this focus, clinic and Collective Health are no longer dichotomous knowledge fields. On the other hand, the combination of these paradigms excessively contributes to a general medical education with expanded view. This education acknowledges the complexity that permeates the health-disease process in its different biological, subjective, socioeconomic, healthcare and cultural dimensions.

Before representing dichotomous and disconnected spaces that are unattractive to students¹⁹, confluence between clinic and Collective Health in the curricular matrix of medical courses contributes to a human, ethical, critical and reflective education. Therefore, it can be aligned to the population and community's health needs and their epidemiological reality. Additionally, it strengthens the development of health promotion and disease prevention actions, with an analytical focus on therapeutic practice, social determination and health-disease process¹¹.



Health education and management

In the seminars, confluence between the National Curricular Guidelines' guidance and Collective Health, related to health education and management, was also identified. In this context, reflection on the potentialities of scenarios of practice to a systematic dialog between medical students and communities during their education was also prioritized. Therefore, the creation of fruitful ambience for the development of continuous reflection/education processes regarding health practices was facilitated. These health practices are also limited and referenced by users of health services²⁴.

Mechanisms and strategies that not only foster the diagnosis and treatment of diseases but also promote the development of protagonism and autonomy of medical students, doctors and users with the care process are also established^{24,25}. Additionally, a strong bond among these agents is also facilitated, enabling the development of horizontal relationships based on mutual respect:

[...] These are challenges faced by higher education institutions. Acknowledging the importance of each subject for the therapeutic plan's success [...] I think we should resume a reflective criticism, fixing, building and finding better ways and teaching and care practices. (S2)

Based on this scope, we move towards a curricular proposition that values life, aiming at improving the quality of healthcare by developing strategies that also strengthen health promotion and disease prevention actions that are essential to medical practice. With this in mind, there is an attempt to change from a paradigm based on (pain) indicators focused on negative health effects and on the biomedical and healing point of view to a structure of indication focused on life conditions and social contexts in which social life production and reproduction processes are developed²⁶.

The incorporation of these propositions in the curricular matrix of medical courses resignifies the current education model. The current model prioritizes hospitals as the scenario of practice, promoting a mismatch among guidance from public policies¹⁰⁻¹², the country's social needs and primary care strengthening²⁷. On the other hand, this incorporation promotes praxis based on a permanent and inseparable process of reflection and action combined with interactions and determinations from the concrete social world where students and users of health services mutually help each other in order to build a socially-based shared knowledge with social return²⁸, as shown below: "In terms of education, professional competencies that promote autonomy and intellectual independence with social responsibility are, essentially, unmistakably important for the education of good doctors. (S4)

Therefore, it favors the creation of a curricular matrix that is fed by and that feeds social demands, that is based on the community's morbimortality profile and that incorporates the challenge of responding to the population's health needs. It adopts primary care as the priority care level to implement the suggested curricular changes, based on its ability to operationalize most of the competencies provided by the 2014 National Curricular Guidelines. Additionally, it is aligned to the policies that foster the development of this care level, taking into consideration the need to readapt and strengthen the education of human resources according to SUS needs¹⁰⁻¹⁴.



Therefore, it is necessary to develop strategies that are able to connect students to primary care in an organized and systematic way throughout the course. However, the material conditions were pointed out as weak elements:

I think some difficulties to insert students in service could be overcome if universities would participate more actively in the management of health units. It would be really interesting if students could have a certain stability in health units – fixed units of practice throughout the course. (S3)

Regarding health management, the new 2014 National Curricular Guidelines guide medical courses to promote the community's wellbeing by valuing life through general, propositional and problem-solving doctors. In order to do so, the guidelines encourage the creation and implementation of intervention plans that support creativity and innovation¹¹. However, the seminars' participants indicated these elements as critical and incipient:

[...] we live in a self-service culture where people, and our students, actually prefer what is ready. In other words, things that are already done are preferred. Thinking, doing and innovating are considered a waste of time or of resources. They believe that using what is ready is more practical. We also notice that several doctors also assimilate this attitude in their practice. (S4)

Despite the challenges, initiatives have been developed in order to foster the medical students' commitment to advocate for citizenship, human dignity and right to health. Therefore, collaborative work and teamwork, aligned to the development of teaching and learning scenarios based on professional and compassionate ethics, are important tools to resignify healthcare:

We have been trying to provide learning in which students discuss with colleagues about problematic situations. We also provided fieldwork, in which, besides facing health problems, students are motivated to describe and analyze them and suggest collective solutions with the community. (S3)

Therefore, the potentiality of scenarios of practice and collectivity to the development of a commitment with quality, comprehensive care and continuity of care is acknowledged. Additionally, the perspective of users, family, students and professionals is included, helping with a collaborative health work. All these processes contribute to prioritizing problems in order to improve the work process and healthcare's organization. Therefore, there is an advance towards the search for a collective construction of the health system based on human, ethical, compassionate and healthcare principles¹¹.

Collective health as the basis for the creation of a new curricular matrix of medical courses

The connection between the new 2014 National Curricular Guidelines and the theoretical and conceptual framework of Collective Health enables a deeper

analytical and reflective analysis of its interrelations. It also contributed to subsidize the proposition of a new curricular matrix in the School of Medicine of Universidade Federal do Ceará.

The knowledge acquired by teachers and technicians during the seminars enabled a paradigm approximation among the National Curricular Guidelines' competency areas¹¹, the structural fundamentals of Collective Health⁶ and the curricular components of medical courses²⁹. Aimed at fostering the importance of a comprehensive and human care in medical education, a deeper integration among the curricular contents was sought throughout the modules. Additionally, a transversal insertion of communication skills components and of the relationship between doctors and patients was provided, being also included in the syllabus of some modules throughout the course.

The schematic representation of the new curricular matrix as a result of the seminars contains the approach of each competency area of the National Curricular Guidelines throughout the course, connected with the three structural axes of Collective Health. In the beginning of education, students go through an introductory process (I) in the three areas. Throughout the semesters, main focuses (F), and theoretical and practical deeper studies (TPS) are guided in connection with the modules' content. In residency, these three areas return with a deeper practical focus (PF). Components related to Epidemiology; Social and Human Sciences; and Politics, Planning and Management transversally feed the content in all semesters.

The curricular matrix's schematic representation can be seen in Figure 2 below:

COMPETENCY AREAS	S1	S2	S3	S4	S5	S6	S7	S8	Residency	THEMATIC AXES
Healthcare Individual and collective Health education Health management	I	F	TPS	X	X	X	F	X	PF	Epidemiology Social and Human Sciences Politics, Planning and Management
Healthcare Individual and collective Health education Health management	I	X	X	TPS	F	F	X	X	PF	Epidemiology Social and Human Sciences Politics, Planning and Management
Healthcare Individual and collective Health education Health management	I	X	X	F	X	X	F	TPS	PF	Epidemiology Social and Human Sciences Politics, Planning and Management
TEACHING, RESEARCH AND EXTENSION										
I = Introduction F = Main focus PF = Deeper practical focus X = Permanent topic TPS = Deeper theoretical and practical focus										

Figure 2. Representation of the curricular matrix of medical courses

Source: created by the authors.



The layout of a curriculum shows how an educational institution sees itself in the world, its role, the relationships it establishes, its choice of interlocutors and how it produces and conceives knowledge. Additionally, particularly in schools of Medicine, it shows the conception of health and of the doctor's role in society²².

In this sense, the suggested curricular matrix tends towards a redesign:

It resignifies primary healthcare as a preferential scenario for the development of knowledge, skills and attitudes of doctors.

It fine-tunes the development of its praxis according to the most prevailing health demands of families and communities.

It suggests the establishment of longitudinal and transversal relationships among the 2014 National Curricular Guidelines' competency areas, basic Collective Health cores and curricular components offered during the course:

Nobody disagrees that curriculum is important. However, we have to discuss the strategies we can use to achieve our objectives with the students: educate doctors of people, not of diseases! Curricula should be used to educate, not misshape. We should not philosophically sicken our students. (S1)

Therefore, the curriculum is now seen not as an end, but as a means on which different pedagogical strategies are based. The inseparability of teaching, research and extension as the foundation of a solid education should also be considered in order to prioritize care for concrete health needs of the population. It is necessary to permanently insert students into primary care, adopting it as a concrete scenario for the development of practical activities in contexts of growing complexity and responsibility¹.

The insertion of students in primary healthcare also contributes to strengthening Family Health Strategy, since it helps in the dialog between services and universities. Therefore, it potentializes the flow so that the academic triad of teaching, research and extension can work in the development of technologies and tools that can provide a greater capability to address the challenges in the service's daily routine.

Additionally, strengthening the articulation among teaching, service and community enables the creation of scenarios that favor the exchange of knowledge, in which the complexity in the daily work routine of health services feeds discussions and enriches the teaching and learning process in undergraduate courses. Through these experiences, students understand the difficulties and possibilities of combined health practices, experiencing the real SUS routine.

Final remarks

Planning the education of human resources in health in order to meet SUS needs remains a current challenge, particularly in Medicine. In this sense, government initiatives have been instituted in order to redesign the curricular structure of medical courses, contributing to a professional education that can effectively meet the most prevailing health demands of the population.

Under the scope of this process, the new 2014 National Curricular Guidelines of medical courses were instituted. They aim at strengthening primary healthcare,



resignifying it as a strategic space for medical education. Additionally, they value the potentialities of Collective Health, incorporating its paradigmatic elements in the proposition of articulated competency areas in order to foster a comprehensive healthcare.

In this context, the suggested curricular matrix aims at encouraging graduates to understand determinants and relationships between diseases and people's way of living and work. In order to do so, it values the teaching-service-community triad as a strategy that can provide changes in people, family and community's healthcare.

The need to carefully listen to all involved agents is evident, from the creation of new matrices in the curriculum of medical education to a dialog that is closer to the public health system.

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Authors' contributions

All authors participated actively in all the stages of the preparation of the manuscript.

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Translator: Caroline Luiza Alberoni

Submitted on 12/07/17.

Approved on 10/08/18.