

## Integration of higher education institutions with municipal health systems from the perspective of an interprofessional collaboration typology

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The purpose of the present study was to investigate the interprofessional collaboration process among directors and professors from higher education institutions, managers from municipal health systems and professionals from the Family Health Strategy in two critical municipalities to the expansion of health higher education in the state of Ceará. The investigation was an analytical multiple case study. The tools used to gather information were documental search and semi-structured interviews with 75 healthcare managers and professionals and higher education directors and professors. The data was submitted to thematic analysis grounded on an interprofessional collaboration typology. The results showed that in Sobral cooperation among the mentioned agents is in progress while in Juazeiro do Norte it is incipient. The facilitating factors were clarity about the benefits of integration for the quality of care and professional education, institutionalization and participatory management of the process.

**Keywords:** Teaching-care integration services. Health management. Undergraduate medical education. Nursing education programs.

## Introduction

The Global Independent Commission, formed by the scientific journal *The Lancet* to investigate the education of health professionals in the 21<sup>st</sup> century, has defined three generations of educational reforms that succeeded each other from the beginning of the 20<sup>th</sup> century onwards<sup>1</sup>. The first generation, triggered by the Flexner Report<sup>2</sup>, instituted a science-based curriculum. The second generation introduced innovations in problem-based pedagogical methodology. The Commission states that the third generation is necessary now and should be based on systems, with the formation of interinstitutional and interorganizational health and education networks<sup>1</sup>.

Studies have documented that experiences of integration between higher education and health services have been implemented in the Americas since the 1970s<sup>3,4</sup>. After the decentralization process underwent by Brazil's National Healthcare System (SUS), the majority of the health service networks started being managed by municipalities, mainly the primary care networks<sup>5,6</sup>. From that moment onwards, the federal and state governments' initiatives in permanent health education<sup>7,8</sup> started to need the municipal governments' collaboration to promote an effective integration of undergraduate courses and permanent education programs with the services.

In the first years of the 21<sup>st</sup> century, experiences of integration between municipal health systems and higher education institutions emerged in which municipal managements assumed a leading role and created structures to manage specifically this process<sup>9</sup>. Some of these experiences were defined as School Municipal Health Systems: a municipal system in which all the assistance units and health promotion spaces were transformed into teaching, research and extension spaces<sup>10</sup>.

Right after this, the Ministries of Health and Education fostered interministerial structuring actions as devices to favor a reorientation of education in the area of health. One example is the National Program for the Reorientation of Professional Health Education, launched in 2005, which aimed to stimulate the transformation of the education process, with the objective of incorporating a comprehensive approach to care<sup>11-13</sup>.

In 2007, directive no. 1996 attributed to the *Colegiados de Gestão Regional* (CGR - Regional Management Boards), with the participation of *Comissões de Integração Ensino-Serviço* (CIES - Teaching-Service Integration Commissions), the regional conduction of Permanent Health Education<sup>14</sup>.

In 2013, the law that institutes the *Programa Mais Médicos* (Program More Doctors)<sup>15</sup> passes and proposes the reorganization of the offer of medicine programs and open positions for medical residency, prioritizing health regions with a lower ratio of open positions and doctors per inhabitant and with a structure of health services able to offer a sufficient and high-quality field of practice to students. The majority of projects for new undergraduate medicine programs will be developed through partnerships between public or private higher education institutions, municipal health systems and/or state health systems.

The development of this study emerged from the recognition of the importance of building strategies for health professionals' education in the context of health systems and services. In light of the

organization of the Permanent Health Education policy<sup>6</sup> and of the School Municipal Health Systems<sup>16</sup>, and in view of the new agendas for the expansion and interiorization of medicine programs, we believe that the reflection on interprofessional collaboration<sup>17</sup> between professionals from higher education institutions and municipal health systems is strategic.

The recently published national curriculum guidelines for health programs have adopted primary care as one of the main service networks for the education of professionals<sup>18,19</sup>. For this reason, we adopted the Family Health Strategy as the context of our study<sup>20-22</sup>.

The research setting were the municipal health systems of the cities of Sobral and Juazeiro do Norte, in the state of Ceará (Northeastern Brazil), strategic regional poles for the expansion of health education, especially of higher education, in the last fifteen years. In the municipal health system of Sobral, the expansion of higher education occurred initially by means of a federal public institution, with the implementation of medicine, dentistry and psychology programs in 2001<sup>23</sup>. Subsequently, the private sector also created undergraduate health programs, resulting in the offer of 1,307 places for new students in 2016, according to data obtained from the higher education institutions' websites or when we visited these institutions. In the municipal health system of Juazeiro do Norte, the expansion occurred through private higher education institutions, with the implementation of the first undergraduate medicine program approved in the interior of the Northeastern region in 1998<sup>24</sup>. A total of 1,086 places for new students was offered in 2016, according to information provided by the higher education institutions.

Considering that, in the two cities, teachers and students from the institutions have practical classes and curricular internships in the services of the municipal health system, we decided to investigate aspects of the partnership established among the institutions and the actors involved. The research questions were: how does interprofessional collaboration occur between teachers from the higher education institutions and professionals from the municipal health systems of Sobral and Juazeiro do Norte? What are the facilitating elements and the current challenges to the integration process between undergraduate teaching and municipal health services? Therefore, this study aimed to investigate the interprofessional collaboration process between deans and teachers from the higher education institutions, managers of the municipal health systems, and Family Health Strategy professionals of Juazeiro do Norte and Sobral.

## Methodology

Our reference was the case study methodology described by Stake<sup>25</sup> and Yin<sup>26</sup>, and we developed a descriptive and analytical study of multiple and exemplary cases.

Different techniques<sup>27,28</sup> were used for data production: 1) Documentary analysis: research in the websites of the higher education institutions, Ministry of Health and Health Departments, and collection of printed documents about the municipal health systems and the higher education institutions of Sobral and Juazeiro do Norte; 2) Semi-structured interviews with municipal health managers, deans, coordinators of undergraduate health programs, teachers who developed practical teaching activities in primary care units, and the managers of these units. The research participants totaled thirty-eight in Sobral

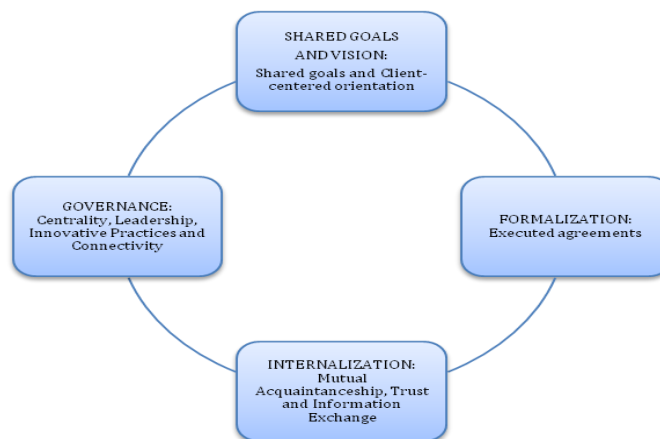
and thirty-seven in Juazeiro do Norte (Table 1). Fieldwork was carried out between August 2010 and August 2012.

**Table 1** – Research participants by function and city, Sobral and Juazeiro do Norte (JN) – Ceará, Brazil, 2012.

Participants	Sobral	JN
Deans of Higher Education Institutions	2	2
Coordinators or teachers - undergraduate health programs	17	12
Secretary or other municipal health managers	3	3
Managers of Primary Care Units	16	20
Total/city	38	37
Total	75	

All the interviews were recorded, transcribed and submitted to thematic analysis<sup>29</sup>. Our purpose was to understand our subjects' discourses. The theoretical framework that grounded the analysis was the Typology of Interprofessional Collaboration, understood as an intersubjective human process and also as an articulation that involves the interrelational collaboration of managers and professionals in health systems within a context defined for the qualification of care. Aiming at the conceptual development of interprofessional collaboration, D'Amour et al. developed a sequence of studies in primary care services based on the collective action of organizational sociology. From these studies, emerge the theoretical proposal for the Typology of Interprofessional Collaboration, which has four dimensions operationalized by ten indicators for the analysis of the collective action of interprofessional work. The dimensions are interrelated and influence one another mutually. Two dimensions involve relationships between individuals and two involve the organizational setting, which reflects on collective action. The relational dimensions are: 1) **Shared goals and vision**, which refers to the existence of common goals and the recognition of divergent motives, and 2) **Internalization**, which refers to a sense of belonging, knowledge of the values, discipline and mutual trust of the professionals involved. The organizational dimensions are: 3) **Formalization**, which clarifies expectations and responsibilities involved in the collaborative process, and 4) **Governance**, that is, the orientation and support given to professionals as they implement innovations related to interprofessional and interorganizational collaborative practices. These four dimensions and their interaction capture the processes inherent in collaboration. They have ten indicators (Figure 1). When D'Amour proposed the Typology, she constructed a descriptive matrix in which she classifies the degree of development in three levels: 1<sup>st</sup>) latent or incipient; 2<sup>nd</sup>) under development; 3<sup>rd</sup>) active. We used this matrix to classify the cases of Sobral and Juazeiro do Norte<sup>30</sup>.

**Figure 1** – Dimensions and indicators of the Typology of Interprofessional Collaboration proposed by D'Amour (2008).



Adapted by the authors from D'Amour et al., 2008.

The present article gives continuity to the manuscript *Interprofessional collaboration among higher education teachers and health professionals: a case study*<sup>31</sup>, in which the analysis of the interprofessional collaboration between higher education institutions and the municipal health system in Juazeiro do Norte was presented. In the current article, we compare the case of Juazeiro do Norte with the case of Sobral.

Concerning the ethical aspect, we followed Resolution 466 of December 12, 2012, which regulates research with human beings. The study was approved by the Research Ethics Committee of *Universidade Estadual Vale do Acaraú*, protocol no. 911.

## Analysis and discussion of results

### The case of Sobral: interprofessional collaboration under development in the school municipal health system

Based on the theoretical framework of the Typology of Interprofessional Collaboration<sup>30</sup>, concerning the dimension Shared goals and vision, the interviews with the municipal health managers and deans of higher education institutions in Sobral suggest that they share the vision that the integration between higher education and health service contributes to the quality of care and of professionals' education. The deans recognize the importance of collaborating with the municipal health system, as it contributes to higher education by providing space for internships in its different services.

“What has occurred is that this Medicine program enabled the practical activities and some theoretical activities to be carried out both in the municipal health system and at Sobral's *Santa Casa* [hospital], including, also, *Hospital do Coração*. And, in the municipal health system, students were included both in primary and in secondary care. So, we could build this, and in this partnership, we also have the government of the state of Ceará [...]” (Education Manager 1)

The deans underline the need to adapt the units' physical structure and the education of teachers and health workers to in-service teaching, with the purpose of improving professional education. The municipal health managers feel that students need to have a social commitment to the community. We observed, in the discourses, that the managers view the services' user as the priority object, while the deans believe the focus is on the student. However, this does not prevent them from sharing the vision that the teaching-service integration contributes to improve both healthcare and professionals' education.

According to the teachers, there is a variety of goals that they share with the professionals, such as the improvement in the quality of assistance, the qualification of professional education, health promotion, among others. According to these teachers, there have been changes in the activities of primary care units to make them compatible with teaching, like changes in the calendar and in the times of individual consultations and therapeutic groups.

The majority of the managers identified they share assistance goals with the teachers, emphasizing health promotion, disease prevention and the improvement in the quality of the Family Health Strategy. One of the managers reported services planning and organization, and integration with the multiprofessional team. Authors have emphasized that mutual understanding and shared values are important for partnerships between higher education institutions and health services<sup>32</sup>.

Among the managers who detailed the goals shared with the teachers, some identified the goal of improving students' quality of learning. However, the view that there are shared goals between health professionals and teachers as far as patient care is concerned is not unanimous among the managers. One group believes that universities do not show interest in users' needs and focus their attention on students. Other studies about teaching-service integration in Brazil have already shown that the multiplicity of actors involved (students, teachers, managers, professionals and people from the community) make this process complex and dependent on aligned goals and the participation of all<sup>33</sup>. In Finland, in a study about the partnership between higher education institutions and health services, the authors highlight that the absence of well-established shared goals is a factor that limits the process<sup>32</sup>.

The teachers mentioned, as results of practical classes at the primary care units, the development of students' relational skills, like empathy, humanization, and bonds with the user and the community, thus strengthening communication competences and the establishment of bonds. These results strengthen the ideas of authors who defend the partnership between higher education institutions, services and the community as generating reflection spaces on healthcare<sup>9,34</sup>.

The majority of the managers recognized the contribution given by teachers and students to the care provided for individuals and the community. The following elements were highlighted: students' contribution to health education activities and to the innovative character brought to routine actions of the services; the intensification of social mobilization and the strengthening of bonds with the community by means of integration with schools, community associations, churches and community leaders in general; and the utilization of new technologies for group work.

The deans and teachers highlighted, in the interviews, the contribution given by the practical activities of the higher education institutions to the process of providing care for users. Some of the transformations potentialized in the municipal health system were: qualification of care through assistance in medical specialties, increase in the number of outpatient assistances, home visits, and promotion actions. Studies have recognized that the mutual benefits generated by the teaching-service partnership are a factor that facilitates the process<sup>32, 22</sup>.

Moving forward in the dimensions of the Typology of Interprofessional Collaboration, regarding internalization<sup>30</sup>, the occurrence of forums among professionals and university teachers every semester enables their strengthening. The teachers showed they knew about the technical capacity of service professionals and mentioned the action of the following categories: community agent, nursing technicians, physicians, psychologists and oral health technicians. The majority of the teachers expressed trust in the professionals who support students' activity at the primary care units and mentioned their availability to work, practical experience, and knowledge of the local community as positive factors.

The forums among professionals and teachers favor mutual acquaintanceship and information exchange<sup>10,30</sup>. However, a forum that is held once every semester perhaps is not enough to maintain an "optimal" level of information exchange for an effective interprofessional collaboration and teaching-service integration.

The majority of the interviewed teachers report participating in periodical meetings with the primary care unit team to plan the practical classes, which is related to the connectivity indicator of the governance dimension. These teachers' perception is that the meetings with the health team are a space for the adjustment of working techniques. According to a teacher, "They help because we get to know the reality and problems and we configure the themes aiming to discuss reality (Teacher Sobral 17)."

The majority of the managers considered that the exchange of information with the teachers about users is weak, which reveals a certain degree of fragility of the information exchange indicator<sup>20</sup> from the health workers' point of view.

Therefore, we found that the collaboration process between the higher education institutions and the municipal health system of Sobral is under development as far as the Internalization Dimension is concerned, with the progressive but incomplete establishment of mutual acquaintanceship, trust and information exchange among workers and teachers.

Regarding the Formalization Dimension<sup>30</sup>, a directive that recognizes the municipal health system of Sobral as a School Municipal Health System was published, designating the Visconde de Saboia Family Health Education School as the coordinator of this system. There is a model of partnership to grant internships, and a specific working plan is designed to each partnership. The objective expressed in the city's Annual Management Report, transcribed below, was another evidence identified in the collaboration:

To implement the School Health System of Sobral, aiming to transform and qualify health practices, the organization of actions and health services, the educational processes and pedagogical practices in the education and development of health workers based on the principles and guidelines of the SUS.

In Sobral, political centrality is evidenced by the attribution of the responsibility for coordinating the relations between the higher education institutions and the municipal health system to the Visconde de Saboia Family Health Education School. This organization, created in 2001, has managers dedicated to Permanent Health Education and research, 6 tutors for the School Municipal Health System, 14 preceptors to the Multiprofessional Residencies in Mental Health and Family Health, and 5 preceptors dedicated to workers' Permanent Health Education. In addition, it has a teaching-service integration workgroup that monitors the normative and operational part of the learning settings and a satisfactory physical structure. The School has published the journal *SANARE: revista de políticas públicas* (public policy journal) since 1999, recording experiences and research conducted at the municipal health system of Sobral. The School is responsible for regulating internships and practical classes in order to match the number of students and their needs to the installed capacity of the municipal health system.

The deans were also involved in the partnership and manifested the need of improving the discussion spaces, mainly to include the evaluation of the collaborative work. The leadership indicator was observed in the discourse of the manager of the Visconde de Saboia Family Health Education School, when he mentioned different paths for the coordination of the municipal health system's and the higher education institutions' work. For example, he suggested meetings held with all the higher education institutions simultaneously to make decisions about common problems, and meetings with each institution separately to decide specific situations. The testimony of one of the Sobral teachers highlights the broad possibilities of inclusion and education of students in the context of a municipal health system, and points to other settings in the territory apart from the health units. The home visit, for example, is a rich learning opportunity, not to mention health councils and schools, reinforcing the literature findings about the theme<sup>35</sup>.

Considering the governance dimension, in the definition of the indicator support for innovation, D'Amour<sup>30</sup> highlights that collaboration necessarily involves changes in clinical practices and in the sharing of responsibilities, and that it is necessary to have a process of complementary learning and an internal or external expertise for support. We believe that the Visconde de Saboia Family Health Education School and the Multiprofessional Residency in Family Health are organizations that structure the integration between higher education and the municipal health system of Sobral, which we consider to be a School Municipal Health System.

Many managers view the absence of a financial incentive to the health workers who support students as a failure of the integration process. This happens mainly in relation to public higher education institutions which, many times, refer their students to healthcare units without the presence of a teacher.



The creation of the Teaching-Service Integration Commission in the North macro-region of the state of Ceará may catalyze the connectivity between higher education institutions and the municipal health system of the region. Concerning the connectivity indicator of the Governance Dimension, we observed a contradiction between the discourses of teachers and managers of healthcare units. While the former reported participating in meetings with health professionals, the latter stated that there were no meetings or that they were insufficient.

Of the managers who stated there were planning meetings between teachers and health professionals, two stated that the meetings helped to construct shared goals: “As we gradually have opportunities to plan the activities to be developed and to provide a more informed feedback between the team and the institution (Manager Sobral 11)”.

In short, the analysis of the data corpus of Sobral in the perspective of the Typology of Interprofessional Collaboration<sup>17,25</sup> suggests a collaboration process under development, as we found evidence of the presence of all ten indicators of the dimensions of interprofessional collaboration. It is important to mention that some indicators are more advanced than others.

### **The case of Juazeiro do Norte: incipient collaboration**

The analysis of the case of the city of Juazeiro do Norte did not confirm the existence of the dimension Shared goals and vision<sup>20</sup> between the municipal health system and the higher education institutions. However, the parties involved recognize benefits deriving from the formal partnership existing between the institutions<sup>31</sup>.

The deans and teachers of the higher education institutions recognize, generally speaking, that the availability of municipal health services as a space for students' practice is fundamental to the development of undergraduate programs:

The partnership between the teaching institution and the Health Department is very important, right?, as the Department really opens the doors to professionals from Universities, Faculties, right?, in the field of internship. We are very well treated, you know, the unit's nurses (Teacher Juazeiro do Norte 13).

However, the deans and teachers mentioned that the collaboration with the municipal health system of Juazeiro do Norte is restricted to the formalization of partnerships in which the management of the municipal department allows the health services to be practice settings and, in return, expects to receive input for the functioning of the units.

The health managers do not have a clear understanding of the fact that the municipal health system of Juazeiro do Norte is responsible for supporting students' education, as regulated by article 200 of Law 8080/90<sup>5</sup>. A health manager who was interviewed recognizes that the city has the “obligation” of contributing to the education of future professionals, but he considers that receiving students and teachers

overloads the services and that some higher education institutions demand that the service's professionals should accompany their students and do not want to provide consumables to the municipal health system of Juazeiro do Norte in return. We believe that it is fair that private higher education institutions and the Ministry of Education and Culture, in the case of public institutions, should effectively provide some capital resource to the municipal health systems that receive students and also pay for consumables, but the collaboration scope cannot be limited to this type of relation, as it seems to occur in the municipal health system of Juazeiro do Norte. The higher education institutions' contribution can go much farther than this, qualifying the services, innovating the health practices and developing professionals.

One of the interviewed managers reported the interest in celebrating partnerships with higher education institutions and the recent creation of a Permanent Health Education Nucleus in the Municipal Department, giving signs of the existence of the indicator shared goals:

In this organizational chart, we implemented, a short while ago, the part of the Permanent Education Coordination. Dr. A stayed there, [...] but there have always been partnerships [...], we took over from 2009 onwards and we were concerned about including the institutions in the Municipal Health Department" (Health Manager Juazeiro do Norte 6).

In the client-centered orientation indicator, we identified the managers' concern about the need to organize the flow of students, considering users' rights and safety, as, in many situations, the number of students per practice is considered excessive.

As for the Internalization<sup>30</sup> dimension, in the municipal health system of Juazeiro do Norte, no spaces were instituted for discussion and joint planning involving the health professionals and teachers of the higher education institutions. Therefore, opportunities for information exchange and the development of mutual acquaintanceship are scarce. The negotiations between the higher education institutions and the municipal health system are limited to a minimum number of interlocutors; thus, there is little dialog between teachers and health professionals. The teachers state that the quality of the relationship with managers and health professionals during internships varies and depends on the thought of the professionals of each primary care unit, which reveals absence of trust.

Regarding the Formalization dimension, there is a model of partnership between the municipal health system of Juazeiro do Norte and the higher education institutions for the institutionalization of internships<sup>36</sup>. The text of the partnership guides, in its general objectives, the development of relations between the client and the contractor, and specifies the functions of internship preceptors, teaching institutions, service heads and the management nucleus of the municipal health system of Juazeiro do Norte. In addition, it establishes how to deal with conflicts that emerge in its course<sup>36</sup>.

In the 2009 Annual Management Report of Juazeiro do Norte, some collaboration initiatives between higher education institutions and the city's municipal health system are mentioned in an isolated way, like an experience of collaboration between the system and one higher education institution that was developed at a Children's Hospital, among other initiatives. We believe that these are isolated actions that do not mean a comprehensive integration between higher education and the municipal health system.

Concerning the Governance dimension<sup>11</sup>, the analysis of the data corpus of Juazeiro do Norte reveals that political centrality in the direction given to collaboration between higher education institutions and the municipal health system is exercised mainly by the deans. They are the ones who highlight the importance and potential of the interprofessional collaboration process between teachers and professionals for the qualification of teaching and users' healthcare.

The deans also report that the activities of teaching, research and extension that the higher education institutions offer are little explored by the municipal health department. In fact, in a recent review of eight experiences of teaching-service integration in the American continent, it was observed that this interaction is complex and is implemented slowly. The partner institutions must strive to build dynamics and processes to facilitate and stimulate integration<sup>9</sup>.

According to the interviewed deans and teachers, the pedagogical-political project and the curriculum of the undergraduate health programs of the higher education institutions of Juazeiro do Norte that were studied head towards the education of professionals capable of working in the Family Health Strategy and in the SUS. Therefore, the purposes existing in these documents induce interprofessional collaboration<sup>30</sup> between teachers from higher education institutions and professionals and reveal political centrality. However, this centrality is not present in the health managers, who are sensitive to the project but are not sure about how to use it to improve the services. This fact probably hinders the development of interprofessional collaboration.

As for the existence of support for innovation<sup>30</sup>, we observed lack of management processes, decision-making and a clear direction concerning the intensification of interprofessional collaboration between teachers and health professionals. We did not identify spaces for dialog and pacts among the different actors. This may explain the tensions observed in some relationships of the type teacher-health professional who works in services that receive students.

In short, the analysis of the data corpus of Juazeiro do Norte in light of the Typology of Interprofessional Collaboration suggests an incipient collaboration process, as some indicators of the dimensions are very weak or do not exist, such as shared goals, mutual acquaintanceship, trust, information exchange and support for innovation. The interinstitutional partnership exists, but the managers' understanding of the process is centered on formalization, distant from possibilities of learning and sharing the work collectively.

## **Final Remarks**

The analysis of the cases of integration between higher education and the municipal health systems of Sobral and Juazeiro do Norte revealed differences in the stages of interprofessional collaboration. In Sobral, we observed an interprofessional collaboration process under development among health managers, deans of higher education institutions, workers from the Family Health Strategy and teachers, while in Juazeiro do Norte the process was incipient.

It is necessary to highlight that variables of the context in Sobral, like the continuity of the same political line in the municipal management for 15 years, has favored the managers' political centrality in the development of the Family Health Strategy and the prioritization of the integration with the higher education institutions. This generated the creation of the School Municipal Health System and of the Visconde de Saboia Family Health Education School in Sobral<sup>22</sup>. In Juazeiro do Norte, the process is still at the initial stage, limited to partnerships, and needs political centrality in the teaching-service integration, dialog and negotiation among the actors to advance.

The results of this study show that the prospective analysis carried out by Frenk et al.<sup>1</sup> was right about the need of integration between professional educational systems and health systems so that the needs of both can be aligned. In our study, the challenges to improve the process in the municipal level are: better monitoring, systematization and management of in-service teaching activities to better define directions, with the possibility of developing information technology tools to support decision-making; qualification of teachers and health professionals in in-service teaching, with the recognition of the latter by the higher education institutions; integrated curriculum and the use of problematizing methodologies of education, capable of educating critical professionals; improvement in patient safety and in the respect for their privacy; adaptation of the services' physical structure to teaching; implementation of incentives for health professionals/preceptors. If we take this discussion to a state and national perspective, it is necessary to consider that the SUS managers must participate effectively in the regulation of professional education in Brazil.

The elements that facilitated the integration between higher education and municipal health system were: the clearness of the benefit of this process to qualification of care and education; organization of forums among health managers, deans of higher education institutions, teachers and professionals to exchange information and improve integration; normalization by means of directives and partnerships, with the specification of the partners' responsibilities; migration of educational activities to new settings in the territory, such as schools, associations, social participation spaces; last, but not least, the creation of structures to support integration.

Further studies need to be carried out to guide the integration between higher education and municipal health systems in Brazil. Many questions still need to be answered: What is the impact of the integration of teaching with municipal health systems to those who have completed undergraduate programs? And to the users of SUS? What is its cost and which level of government and institutions should absorb it?

The limits of this study were the non-inclusion of students and service users among the participants; however, its findings are sufficient to reaffirm the importance of actions that induce teaching-service integration in the case of higher education institutions and municipal health systems, such as the School Municipal Health System of Sobral.

## Collaborators

Ivana Cristina de Holanda Cunha Barreto: a) conceived and developed the research that originated the article; b) participated actively in the discussion of the results; c) participated in the review and approval of the article's final version. Kelen Gomes Ribeiro: a) participated in the conception of the research; b) participated actively in the discussion of the results; c) participated in the review and approval of the article's final version. Ana Ester Maria Melo Moreira: a) participated in the conception of the research; b) participated actively in the discussion of the results; c) participated in the review and approval of the article's final version. Neusa Goya: a) participated actively in the discussion of the results; b) participated in the review and approval of the article's final version. Maria Socorro Araujo Dias: a) participated actively in the discussion of the results; b) participated in the review and approval of the article's final version. Luiz Odorico Monteiro de Andrade: a) participated in the conception of the research; b) participated actively in the discussion of the results; c) participated in the review and approval of the article's final version.

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