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# Integrated experience in the community: longitudinal health care insertion as medical education strategy

Ana Luiza de Oliveira e Oliveira(a) Lucas Pereira de Melo(b) Tiago Rocha Pinto(c) George Dantas de Azevedo(d) Marcelo dos Santos(e) Rafael Barros Gomes da Câmara(f) Pâmera Medeiros da Costa(g) Ádala Nayana de Sousa Mata(h)

(a,b,c,d,e,f,g,h) Escola Multicampi de Ciências Médicas, Universidade Federal do Rio Grande do Norte. Avenida Dr. Carlindo de Souza Dantas, 540, 2º andar, sala 204. Centro. Caicó, RN, Brasil. 59300-000. aluloli@gmail.com; lpmelo@ufrnet.br; tiagorp@emcm.ufrn.br; georgedantas.faimer@gmail.com; msantos\_ bio@yahoo.com.br; rafael\_bgc@yahoo.com.br; pameramedeiros@yahoo.com.br; adalamata@gmail.com

Innovative teaching-learning process proposals for medical courses have been developed for generalist, humanistic, critical professional education. Beginning with approval of the More Doctors Program, new schools were created, adopting active teaching methodologies and promoting further community-service-teaching integration. This paper is an experience report on the development of the Integrated Experience in the Community module in the medical course at the Medical Sciences Multi-campuses College of Rio Grande do Norte, which provides students with longitudinal insertion opportunities in the healthcare system of the hinterland towns of the Northeast region. This proposed module has been promoting further integration between the university managers, and healthcare workers. The goal of this module is to contribute to securing physicians for in the region and strengthening the healthcare system in the Brazilian hinterland.

Keywords: Community-based education. Medical education. More Doctors Program. Primary Health Care.

#### Introduction

In accordance with the Federal Constitution of 1988<sup>1</sup>, and the creation of the Brazilian National Health System (SUS) in 1990, Brazil has been undergoing a series of changes in an attempt to rearrange health professional education. Since then, the Brazilian government has facing ongoing challenges in trying to redraft the health care model based on the principles of primary health care (PHC) and the implementation of generalist-oriented educational programs, using PHC as the structuring axis for professional practice<sup>2</sup>. This paper presents the longitudinal insertion experience of medical students in the SUS in the interior of Rio Grande do Norte (RN), which has been added to the set of medical education measures currently underway in the country. The objective was to report the experience with pedagogical planning; agreement with the healthcare network of the cities involved; and the ramifications of the Integrated Experience in the Community (VIC) module, offered from the 2<sup>nd</sup> to 8<sup>th</sup> semesters of the medical course at the Medical Sciences Multi-campuses College at Federal University of Rio Grande do Norte (EMCM/RN).

Although PHC has guided the formulation of health policies in Brazil since the 1990s, only in 2006 did it became a State policy with the publication of the National Primary Health Care Policy (PNAB), which was redrafted in 2011<sup>3</sup>. Among the challenges to the consolidation of PHC in the country, shortages of physicians to work effectively and efficiently at that care level was underscored, especially in the North and Northeast regions. According to Schefferet et al.<sup>4</sup>, despite the significant rise in the number of physicians that has occurred from the 1970s up to the present, unequal distribution remains the same, particularly when related to capital–hinterland differences and the size of Brazilian cities. It can be said that the existence of areas of hyperconcentration and, at the same time, other areas with shortages of physicians, ultimately prevent the establishment of the principles and doctrines that guide the SUS, notably when the aim is universalization, integrality, and access to health.

However, it is important to point out that the number of professionals available in Brazil is not the only contributor to the difficulty of securing medical professionals away from the capitals and large urban areas. The locations where professional education is offered play an important role, because there is an undersupply of public and private institutions of higher education (IES) in remote or difficult access areas in the country. This problem has been the focus of several programs and policies developed in the last 20 years; the More Doctors Program (MDP)<sup>5</sup>, created in 2013, was the most recent government initiative to confront this problem.

The MDP consists of a very broad pact aimed at improving the SUS care for users, and is an attempt to increase the ratio of physicians/1,000 inhabitants from 1.8 to 2.7 by the year 2026 throughout Brazil. The MDP consists of three main initiatives: i) provision of emergency physicians; ii) investments in the infrastructure of primary healthcare services; and iii) medical education (undergraduate and residency programs). It is important to emphasize that the Northeast region is the priority in terms of providing and securing professionals, because of a ratio of 1.32 physician/1,000 inhabitants, and confirmation that nearly 80% of those professionals practice in the capitals, turning the hinterland into an environment with high shortages of professionals<sup>4</sup>.

Existing medical courses, and those derived from the context of expansion and interiorization of new vacancies, were faced with the need to revise their curriculums, pedagogical strategies and practice settings. There were several types of challenge, involving integration disciplines and areas of the courses, incorporation of student–centered teaching–learning methods, and a search for greater integration among social equipment, health services, and the community in general<sup>6-9</sup>.

The MDP was involved in the publication of new National Curricular Guidelines for medical graduation courses<sup>10</sup>. These paved the way for development of innovative proposals in the curriculum and in the teaching-learning process in the search for the education of generalist, humanistic, and analytical practitioners. The pedagogical experience and community-teaching-learning integration (IESC) reported in this paper are the result of this broader political-educational context. In exploring this theme, the

general characteristics of the EMCM/RN are presented. Then the VIC module is examined as a strategy for the longitudinal insertion of medical students in the SUS, including agreement processes with city governments and healthcare workers. Finally, some of the results of this audacious and productive proposal are noted.

## Methodology

This is an experience report about the VIC module, which is a mandatory curricular component developed in the EMCM/RN. The implementation of the module followed several steps in 2015 and the first half of 2016: pedagogical planning and preparation of manual of activities for students, supervisors, tutors, and managers; agreements with the city government and healthcare workers; and evaluation of the ramifications of the VIC experience for medical student training and qualification of the health care network.

From this perspective, the study followed an experience report presented as an intervention and outcome model<sup>11</sup> of how the VIC module was designed and how it could reverberate in new longitudinal insertion proposals in the education of EMCM/RN medical students. A narrative path was developed from the development of the institutional context of the VIC module through to the results achieved by the module through 2016.

#### The context

The institutional context in which the pedagogical experience that is the object of this paper has been conducted is EMCM/RN. This academic unit was created by an expansion of vacancies in medical courses driven by Decree MEC/SESU no, 109, of June 5, 2012, and 2013, and also by the MDP. In addition, EMCM-UFRN is line with a set of actions for interiorization of the federal IES that started as the Support Plan for Restructuring and Expansion of Federal Universities (REUNI), established by the federal government by Decree no, 6096 of April 24, 2007<sup>12</sup>.

Since the establishment of REUNI, the Federal University of Rio Grande do Norte stands out for its presence in the interior of the state, which has led to strengthening and restructuring existing units and creation of new units. EMCM/RN includes campuses in Santa Cruz, Currais Novos, and Caicó; its administrative headquarters are located in the latter city. The medical undergraduate course started on July 25, 2014, with a proposal to train physicians for the hinterland healthcare network, prioritizing students' connections with the health and social reality of the population, and in line with qualifying the training as being technical–scientific, ethical, and humanistic. The mission of EMCM/RN is to respect the autonomy of students, supplemented by active learning methodologies<sup>13</sup> that allow for understanding of the production process, and comprehension and expression of knowledge within the perspective of transformation of the reality.

In addition to professional education and based on the notion of social responsibility, UFRN established the Argument for Regional Inclusion (AIR) by Resolution no. 177–CONSEPE of November 12, 2012, as a way to ensure that students bonded with the regions where they graduated. AIR has been used in the Unified Selection System (SISU) through an increase of 20% in the grade of candidates during the recruiting process. Candidates are eligible for AIR if they have completed all of elementary school and high school in regular and in–class schools in micro–regions where cities with UFRN campuses are located in the interior of the state (excluding the metropolitan region of Natal) or in all the surrounding micro–regions, according to the definitions of the Brazilian Institute of Geography and Statistics (IBGE)<sup>14</sup>. Currently, with the implementation of this policy, approximately 67.5% of EMCM/RN medical students are from hinterland cities in the states of Rio Grande do Norte and Paraíba.

The Pedagogic Project of the Course (PPC) is based on the development of skills through the use of an integrated curricular plan and the student-centered teaching-learning method, mainly problem-oriented learning (ABP) and IESC. The structuring pedagogical axes of the PPC are tutorial learning, clinical experience, morphofunctional, communication skills, and IESC, in accordance with the National Curricular Guidelines<sup>10</sup>.

A strategy was instituted to allow students to learn, understand, and perform in the healthcare networks of their cities of origin or in municipalities in which EMCM/RN is present. The pedagogical strategy was not limited to specific and discontinuous exposure to healthcare equipment, but also provided longitudinal insertion into the SUS beginning in the early years of the course. As described below, this pedagogical strategy is a curricular component of the VIC model.

### The VIC module: an experience of longitudinal insertion into the SUS

Drawing on the Nietzschean concept of experience as a possibility for those who live a singular experience of becoming what one is<sup>15</sup>, the VIC module has the intention of providing a learning experience in the SUS during the first four years of the medical course, in order to promote technical–scientific, humanistic, and ethical education for the students.

The VIC module is a mandatory curricular component, with 120 hours/class, totaling 840 hours, that is offered from the 2<sup>nd</sup> to the 8<sup>th</sup> semesters of the medical course. (i) Each biannual module lasts four weeks, and student groups are organized according to the capacity of the network of cities involved in receiving them. Currently, 40 students from the first group and 40 students from the second group of the course are received at different times by the cities of Caicó, Currais Novos, and Santa Cruz. They stay for a month, gaining experience in the three levels of care in health care network.

The socioeconomic profile, health system and professional practice characteristics, and health characteristics of the population of this region are closer to the concept of rural medicine advocated by the Brazilian Society of Family and Community Medicine. From this perspective, the EMCM multi-campus axis is guided by the rural expression "not necessarily as a synonym of agriculture (...), but also of (...) remote areas and hard-to-access locations" [6] (p. 144). Besides the logistics of

<sup>(</sup>i) The activities in the VIC module will continue in mandatory internships during the fifth and sixth years, notably with rotations in the areas of family & community medicine and urgent and emergency care.

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distribution of the students in these small towns, the VIC module also includes requirements for developing skills with a focus on rural medicine.

In the near future, this approach may contribute to an increase in securing physicians in the region, based on successful experiences. This is similar to the medical training in the Northern Ontario School of Medicine, in Canada, which has greatly increased the choice of family medicine since the implementation of the longitudinal insertion model by the institution<sup>17</sup>.

From this perspective, contact with communities leads to more robust gains, and PHC effectively becomes the structuring axis of VIC module activities. According to the Guidelines for Primary Health Care Teaching in Undergraduate Medical Education<sup>18</sup>, even though this training focuses on medical knowledge and an approach focused on clinical learning (clinical and semiotic reasoning), it is imperative that such learning also take place by teaching about primary health care in a longitudinal way throughout the course, preferably with lengthy insertions in real work settings. Based on this idea, throughout the VIC modules, there is a progressive increase in the autonomy and clinical skill of students, which leads to gradual insertion into the health services of the three SUS care levels. At the end of the seventh experience, the student is expected to show the practical and theoretical skills that ensure more autonomy and technical, ethical, and analytical commitment to the SUS.

The original proposal was that students would be able to carry out the VIC module in their own cities of origin, as long as they were located within a radius of up to 200 km from the location of the course headquarters. Those who were from cities that did not meet this criterion would be distributed among Caicó, Currais Novos, and Santa Cruz. However, after the second group had enrolled in the course, this format of operational logistics became unviable, taking into consideration the increase in the number of students coming from the cities of the region as a result of AIR. This led to coordination of the course that kept the students distributed among three EMCM/RN campuses.

As shown in Table 1, Caicó, Currais Novos, and Santa Cruz are hinterland cities in the state of RN with populations of 67,747, 45,060, and 39,300, respectively,

according to IBGE demographic projections in 2016. In these cities, the students developed activities in primary health care units (PHCU), the main place of residence throughout the VIC module, and in secondary care health equipment, such as specialty centers, psychosocial care center (CAPS), worker's health reference centers (CEREST), and child and adult rehabilitation centers (CRI/CRA). In tertiary care, the students experienced the care realities of the hospitals in each city.

**Table 1.** Description of the number of students and health equipment by city receiving the Integrated Experience in the Community module.

# of Students # of Health Equipment by Level of Care

City

,		4.1						
		Primary Care	Secondary Care	Tertiary Care				
Caicó	38	16	8	2				
Currais Novos	18	11	6	1				
Santa Cruz	24	5	6	1				
TOTAL	80	32	20	4				

Besides the activities developed in the SUS, emphasis was placed on intersectorality of actions, in conformity with the Unified Social Assistance System (SUAS). Thus, students were included in the reality of the work carried out in Social Assistance Reference Centers (CRAS) and Specialized Assistance Reference Centers (CREAS).

The activities take place on a full-time basis and each student is always linked to the same primary healthcare unit. The actions developed at other levels of care or in the SUAS take place based on the agreement with the module coordinator regarding equipment, adjusting the student schedules to the service. Therefore, students are distributed on a weekly basis in rotation periods of their activities according to the demand of each service. Theoretical instrumentation takes place on Fridays, full-time, at the EMCM/RN.

During practical activities, each student is assisted by approximately six tutors from several levels of care, including physicians, nurses, dentists, nursing and

dentistry technicians, health community agents, physical therapists, psychologists, and social workers. Tutors are regarded as professionals with important roles in the inclusion and socialization of students with the equipment, in order to allow them to experience the daily working processes of the services. This multiprofessional tutoring strategy helps to blur the boundaries between knowledge and the practices suited to different careers, securing working and interprofessional educational spaces in health care.

In addition, in loco course supervision is carried out by the teachers on a weekly basis. Each VIC module requires 20 teachers from the EMCM medical course. Supervisors provide support, motivate students during the process of learning knowledge and skills, and helps to build self-confidence in analytical practice17. The role of supervisors is to guarantee fulfillment of the timetable of the activities proposed by both the module coordinators and the students; when necessary, to mediate the relationships between the students, tutors, and services; hold dialogues with the network; and, in some situations, supervise practical activities in hospitals and outpatient facilities. It is the responsibility of supervisors to assess students weekly through analytical portfolios. There are also teachers who coordinate the module, one for the collective health care area and another for family and community medicine. They are in charge of carrying out general planning, agreement with the cities, and operational organization of the module.

This curricular component is distributed in the syllabus in a way that includes general and specific medical skills developed throughout the educational training (Box 1). Activities such as territorialization, syllabus support, singular therapeutic projects, multiprofessional work, individual care, education in health and continuing education, surveys and home visits, and social control are carried out in ways that provide students with a broad view of medical practice. Besides these activities, students develop hard-core skills of medical practice according to the level of knowledge they have acquired during training. Therefore, each VIC module has its own learning goals to consolidate the learning process of students during training.

Box 2. Biannual distribution of the Integrated Experience in the Community (VIC) modules in the syllabus of the EMCM/RN medical education course.

	FIRST SEMESTER						SECOND SEMESTER									
] st	Introduction	Conce	ption a	nd development	Metabolism			Integrated Biolo		Biolog	Biological functions			Aggression and defense		nd defense
Year	to medical	of the	human	being	(7)			Experi	ence	(7)				mechanisms		
	study	(7)						in the					(7)			
	(4)*							Community								
								1	1							
								(4)								
2 <sup>nd</sup>	Birth,	Integra	ated	Perception,	Cell proliferation		Pain		Integrated		Fever, inflammation, and infect		on	Diarrhea,		
Year	growth, and	Experi	ence	consciousness, a	nd (4)			(4)		Experience		(6)				vomiting, and
	development	in the		emotion						in the					jaundice	
	(4)	Comm	unity	(6)						Community					(4)	
		II								III						
		(4)								(4)						
3rd	Sexual and rep	roducti	ve	Integrated	Menta	l and	Locomotion		Skin		Aging and		Integrated Experience		Child health	
Year	health	health		Experience in	behavioral		(3)		(4)		health		in the Community		(6)	
	(8) the Com		the Community	problems						(4)		V	v			
				IV	(4)								(4)			
				(4)												
4 <sup>th</sup>	Fatigue, blood	loss,	Dyspn	ea, chest pain,	Integra	ated	Environment	Sensory,		Nutritional		Emergencies		Integrated		Terminality
Year	and anemia,		and ed	nd edema Expe		ence	and health	motor, and		and		(4)		Experience		and
	(6)		(6)		in the		(3)	menta	I	metabolic disorders				in the		palliative
					Comm	unity		disord	ers					Community		care

			VI		(4)	(4)		VII	(3)		
			(4)					(4)			
5 <sup>th</sup>											
Year	INTERNSHIP										
6 <sup>th</sup>	Medical Clinic/Surgery/Gynecology and Obstetrics/Pediatrics/Family and Community Medicine										
Year											

<sup>\*</sup>The numbers in parentheses refer to the duration of each curricular module in weeks.

During the VIC, students works a standard week, during which practical and theoretical activities are distributed. During the planning of these activities, the contents and skills already worked out in the different modules offered during that semester are observed, as a way to assure the integration of the curricular components and the consolidation of the skills established in the National Curricular Guidelines. The theoretical activities involve reflection and questions about the experiences of the students during each week, which are recorded in portfolios, conferences, clinical skills classes, discussions on clinical cases, and seminar presentations.

Regarding module planning, it is worth mentioning some of the structuring concepts and principles: social responsibility of medical schools; valorization of local potentialities for teaching; profiles of students with stronger regional bonds; involvement of the community; integration with health care professionals who work at different care levels in the cities; effective integration with the healthcare system; and the adoption of an efficient governance model that is in line with the didactic–pedagogical characteristics of the course.

As a long-term result, it is expected that the longitudinal insertion experience of medical students in the SUS helps to strengthen their ties with local communities and teams, in addition to providing considerable knowledge on the regional health system. Therefore, the VIC module may contribute to securing these new professionals and reasserting the social accountability mandate of EMCM/RN and its academic and social educational model.

# Agreements and impacts on social reality

The implementation and operationalization of the VIC module requires a wide range of actions and coordination prior to the arrival of students in the health equipment, which demands integrated work with management and health care teams in the cities. This work includes several meetings and rounds of negotiation, in which the module objectives are introduced and offered for a specific semester, and the terms of agreement are established between EMCM/RN and the cities. Therefore, this

prior agreement, along with the players and the performance scenarios, requires efforts aimed at promoting better acceptance and awareness by managers and professionals, as well as offsetting agreements of the university as it offers capacitation and instrumentation for the health care teams in order to meet the needs and demands of the continuing education presented.

Professional and educational qualification anchored in continuing education is also a powerful tool. During 2015 and 2016, 18 preparatory workshops for tutors were carried out with broad participation of approximately 220 professionals from the cities of Caicó, Currais Novos, and Santa Cruz. Taking into consideration that all the healthcare workers from these cities could potentially play a tutor role, their value in the community-teaching-service integration process is of unprecedented importance.

Another important element is the creation of the family and community medicine residency and the stricto sensu graduate program in health education, work, and innovation in the professional master's degree program offered by EMCM/RN<sup>19</sup>. Taking into consideration that the worker-tutor value principle must be included in the recruiting process for the program, vacancies are opened for those who work in the healthcare network of the three cities and who are tutors in the VIC modules.

The impact on health care management in the region can be punctuated by establishing elements provided by Law 12.871 of October 2013<sup>20</sup>, which created the MDP, since the VIC module contributed to the creation of an organization contract of public actions for teaching in health (COAPES), signed by 41 cities in two healthcare regions in the interior of RN state. Based on this contract, the responsibilities of institutions of higher education and of several levels of management are expected to be defined and agreed upon, in order to strengthen community–teaching–learning integration at the SUS level.

It should be noted that in the area where EMCM/RN is active, the actions aimed at IESC were tentative or non-existent in some cities at the time of the establishment of the school. This reality poses challenges that must be faced, especially in terms of building communication networks among the university, the community, and the services. Thus, IESC is understood as the construction of dialogic networks among the

university, the health care system, and the members of local communities. In the hinterland, these networks establish lines of communication and multiple, flexible, contextualized, and integrated actions to meet the health needs and demands of the population through actual practice scenarios higher education for training health professionals. The networks engendered by this integration seek to share popular and scientific knowledge and experiences among subjects and institutions, acting as instigators and dealing with health in a way that necessarily requires commitment to protecting the life of the population with quality educational.

The new event represented by the presence and work of students in health services and by the university's interest in participating actively in management and health care in the city is expressed as a mediator of the agreement and clarification of roles, such as those of the university itself, SUS local management, and workers—tutors. These situations increase the differences between the university's expectations and needs and those of healthcare networks, indicating that organizational adjustments and arrangements are still necessary to decrease resistance and permeability, so that both parties can benefit from this experience.

Besides behavior patterns that are "entrenched and lack openness to the new," various types of hindrances and obstacles can be punctuated as factors that have hindered the insertion of students into health services ever since the first years of the course. These include: 1) the fear of professionals about showing weakness and lack of techniques; 2) substandard work conditions and relationships; 3) the urge for financial gain; 4) acknowledgment of limitations and unpreparedness; and 5) less appreciation for pedagogical activities in relation to care responsibilities.

Conversely, it is necessary to point out that there are a great many challenges to be overcome for the trainee role played by SUS to become effective and actually legitimated. This also reveals that there is a need to move forward in several areas, such as: conditions of installations and infrastructure of the health care services; high turnover of professionals during the assembling of the primary care teams; lack of supplies and equipment; pressure for productivity of health indicators; and lack of permanent educational spaces and analysis about daily work<sup>21–25</sup>.

In conclusion: the task of reinventing itself

The scope of the VIC module creates a need for effective planning and

integration of strengths among students, teachers, professionals, and managers. From

this perspective, reflections on the paths followed, rethinking them, and setting out

new possibilities for establishing them are essential for maintaining and strengthening

IESC, in addition to ensuring outstanding education for students.

In order to carry out this process, consolidation and strengthening of

interiorization proposals are priority tasks and must be included in the agendas, not

only of university agents, but also of SUS managers and workers. For this purpose,

meetings with city managers and healthcare professionals must be held periodically,

and actions must be taken related to continuing education for all the subjects involved

in this process. Based on our experience, workshops held with tutors and the offer of

latu sensu specialization and professional master's degree courses have proven

effective.

Within the educational process, the insertion of students in health work process

teams allows critical, humanistic, and ethical formation. The goal is for diversification

of practice settings, interactions with multiprofessional teams, and longitudinal

insertion in the network, to allow students garner the knowledge, skills, and attitudes

needed for the construction of a medical approach that is centered on the person and

sensitive to health system realities.

Collaborators

All authors participated actively in the design of the study, discussion of the results, and writing

the paper. Oliveira ALO, Rocha TR, and Melo LP also carried out the proofreading and finalizing

of the work.

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