



# Educational strategies for human resources in home health care: 8 years' experience from Brazil

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## ABSTRACT

**Objective.** To analyze characteristics, enrollments and completion rates of healthcare professionals enrolled in Self-Instructional Online Courses of the Home Health Care Multicentre Qualification Program, developed by the Ministry of Health and the Universidade Aberta do SUS (UNASUS), and its relationship with Home Health Care Teams implementation.

**Methods.** Data were extracted from the Self-Instructional Online Courses' UNASUS enrollment platform database (2012-2018), cross-referenced with the Health Facilities' National Database and compared to Home Care General Coordination team's database. Main outcomes were completion rates and number of courses enrollments, analyzed by sex, age, region, location, profession, workplace, health teams and course type.

**Results.** Men applied to courses slightly more than women and completion rates were higher (37.1 vs 30.5,  $p < 0.001$ ); there was a small decline in completion rates by age groups (from 32.8% in 18-29 yr to 31.1% in 46-50 yr age group,  $p < 0.001$ ) and a rise in course enrollment number, probably related to progressively "digital native" generations. Self-Instructional Online Courses were attended in all Brazilian states and reached all municipality sizes, with completion rates rising from 29.9% in the North to 37.3 in the South; 30-hour courses were completed by almost twice as many professionals as 45-hour and 60-hour courses, suggesting that modularity may improve completion rates. State distribution and national coverage suggest adequate range and coincidence between enrollment and Home Health Care Teams distribution.

**Conclusions.** Regional aspects influence professional interaction with courses; the feminization of health professions and women's lower completion rates suggest the need for a deeper gender perspective in health facilities and training services. Self-Instructional Online Courses for Home Health Care were an important outreach strategy, with professional's doubts answered more contextually.

## Keywords

Home care services; education, continuing; education; education, distance; health workforce; Brazil.

Home Health Care (HHC) Services have expanded around the world, partly due to the accelerated demographic and epidemiological transition that results in an aging population, and partly due to the need for an alternative strategy for hospital care capable of humanizing assistance practices, qualifying assistance and reducing costs. In Brazil, despite some successful experiences prior to the implementation of the Unified Health System (SUS), only in 2011 Home Health Care gained national

policy status, passing the sector priority aiming at expansion and qualification in the SUS network (1).

In this HHC implementation process, political, conceptual and operational sustainability were achieved through a set of regulations and organizational strategies for services. With federal funding and a model similar to the global strategy "Hospital at home", the national program "Better at home" established 3 care levels: Primary Health Care (PHC) teams were responsible

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for the primary level, and HHC Teams (HHCT) covered levels 2 and 3, aiming to achieve continuity of care among these levels. Each team is composed by a physician, a nurse, nursing technicians and social workers or physiotherapists, supported by the HHC Support Teams comprising other professionals (e.g., social workers, physical therapists, occupational therapists, speech therapists, psychologists, nutritionists, dentists, pharmacists) in order to meet local needs (2, 3).

The “Better at Home” program was a response to improve health access and overcome the hospital-centered model insufficiency, becoming a new point of care as a solution for overcrowded emergency rooms and long-stay rates at hospitals. There was also a need to complement PHC actions for cases requiring more intensive care at home and to create a new paradigm of effective short-term care, which focused on complex patients and hospital intermediaries and PHC Teams (PHCT).

HHC requires a professional profile committed to intersectoral, interprofessional and interdisciplinary actions to promote health, prevention, treatment, rehabilitation and palliative care. Professionals must be more involved in recognizing and respecting the uniqueness of the user and their family, developing different therapeutic strategies and interventions according to the needs and context of each case (3, 4).

During the HHC implementing process there were advances and limitations. The integrality of care, the improvement in the services workflow and the economic-financial rationality contrasted with the inadequacy of admission and continuity mechanisms after discharge. There was also a lack of training among health professionals, since home care was not taught in health undergraduate courses nor in health residency programs (5, 6, 7).

HHC expansion and consolidation required qualification efforts prior to the implementation of services, requiring a National Training and Permanent Education Program in HHC within the scope of SUS (2). In 2012, the Ministry of Health (MoH) hired the Open University of SUS (UNASUS), a pool of Universities defined by Decree 7385 (2010), responsible for providing continuing education to health human resources (8,9) mainly through semi-presential specialization courses and self-instructional courses for PHCT (10,11). Their purpose was to implement far-reaching online courses to raise awareness of the capabilities of this site of care—home—and to train the “Better at Home” professionals as well as the existing PHCT, whose work at home was already an assignment but not with the intended systematization and amplitude (12).

HHC learning demands specific and continuous training, including actions not only to adapt hospital procedures to the home, but a whole different logic to perceive the domestic context as an ill-acting factor in a trans-disciplinary care, integrated to other social and public policies to promote health and well-being. Topics included HHC Services implementation, management and monitoring; the most frequent clinical issues; skills for more complex and palliative care; caregiver issues and others, based on action objectives reversely constructed to promote comprehensive and contextual learning. All theoretical content was developed with direct guidelines and validated by the MoH technical area (12, 13).

Continuing education must be based on permanent in-service training programs, with contextual professional development aligned with the care model, using methodologies that include

virtual learning and innovative technology to support the development of health human resources competencies (14).

The “Home Care Multicentre Qualification Program” (HCMQP) was developed in 3 modalities: 30 to 60 hours Self-instructional Online Courses (SIOC), as an e-learning strategy with broader coverage to reach the whole group of health professionals; followed by two semi-presential tutor-based Specialization Courses (360 hours) and three Qualification Courses (180 hours), all of them distance-learning courses, enhanced by technology and accessible online. SIOC were free online courses, with no obligation of professionals to apply nor to complete by their services. They were opened for 6 months and applicants had 3 months after enrollment to complete the modules and a final evaluation to get a certificate (12,15).

Since the SIOCs were the main strategy to reach nationwide coverage of HHC topics to all SUS health human resources, the aim of this paper is to analyze the characteristics, enrollments and completion rates of healthcare professionals in SIOCs and the teams evolution from 2012 to 2018.

## MATERIALS AND METHODS

One of the HCMQP assignments was to perform an outcome research project that was designated to the Federal University of Santa Catarina, one of the eight public universities involved in the development of HHC courses.

We analyzed all SIOC offers from December 2012 to December 2018. Data were extracted from December 2012, when the first course was launched, until February 2019, to include all enrollments with time enough for the applicants to complete the activities, since participants could finalize them up to one month after the closing date and/or 3 months after enrollment. Data analysis was performed from the HCMQP database, comprising self-informed registration data at enrollment.

Data were cross-referenced with the National Database of Health Establishments (CNES, *Cadastro Nacional de Estabelecimentos de Saude*), which includes data from all health professionals working in SUS facilities. Only professionals in CNES were included, since other professionals could enroll on courses despite not being health professionals or working in the public system and they were not the target audience of SIOCs nor of this research. Since applicants were not required to share all information, some fields were not filled; missing data varied from 5% to 20%, depending on the covariate. Statistical analysis was performed with SPSS Version 11.0 statistic software package.

Data were expressed as rates in relation to course completion and percentages in relation to proportion of people and courses with enrollments. Percentage of completion rate, means and numbers of courses were compared using p-values of Pearson’s chi-square.

We defined “completion” as the main outcome. Completion occurs when the enrolled professional finishes all activities and receives a certification—a declaration that has been approved in that specific course. Data were analyzed by enrollments and by participants in order to study first the total number of enrollments, and then how many people were enrolled and the number of courses taken by them, which was defined as a second outcome. We analyzed data by sex, age, region, location, profession, workplace, health team and course type.

With respect to implementation of HHCT, data was extracted from the Database of the Home Care General

Coordination (HCGC), regarding the number of teams by municipalities and by month, and compared to the number of enrollments by date and by states.

This research was approved by the National Research Ethics System through the Research Ethics Committee of the Federal University of Santa Catarina # 88965418.6.0000.0121, and complied with all ethics requirements for studies with human subjects. Data were completely anonymized by UNASUS before being provided to the researchers to ensure students' anonymity.

## RESULTS

From 2011 to December 2018, HHCT expanded from no teams to 1 091 teams, reaching 451 municipalities and covering 28.1% of the Brazilian population in all states, except two. From

December 2012 to December 2018, there were 165 874 enrollments (82.2% women) from 81 954 applicants (2.02 courses per person; 83.11% women). Of these, 58.2% took only one course, 19.5% 2 courses and 22.3% 3 or more courses.

Main data about the enrollments are shown in Table 1 and about the applicants in Table 2; HHCT and HHCST were the most committed teams in terms of completion rates and number of courses taken. The information presented in these tables was self-informed by the professionals when they enrolled in the courses.

The MPQHC comprised 21 SIOCs offered online and free, in a format similar to Massive Online Open Courses (MOOC). These courses, however, were designed for an audience of health care professionals and were in Portuguese only. Table 3 shows the health professional categories and gender information, as well as differences in enrollments and completion rates.

**TABLE 1. Number of professional's enrollments and completion rates in the Brazilian Home Care Multicentre Qualification Program, Brazil, 2012-2018**

	Number of enrollments	%	Completion rate	p-value <sup>c</sup>
<b>Gender</b> ( <i>n</i> = 163 842) <sup>a</sup>				
Female	134 767	82.2	30.5	<0.001
Male	29 075	17.8	37.1	
<b>Region</b> ( <i>n</i> = 133 906) <sup>a</sup>				
South	22 520	16.8	37.3	<0.001
Center-West	10 607	7.9	34.1	
Southeast	46 880	35.0	31.4	
North	8 940	6.7	31.3	
Northeast	44 959	33.6	29.9	
<b>Age group</b> ( <i>n</i> = 163 832) <sup>a</sup>				
18-29	36 577	22.3	32.8	<0.001
30-39	73 910	45.1	31.0	
40-49	36 542	22.3	31.1	
50-59	13 973	8.5	33.4	
60-more	2 830	1.8	33.1	
<b>Unit type</b> ( <i>n</i> = 72 936) <sup>b</sup>				
Primary Care	38 539	52.8	31.5	0.015
Hospital Care	19 366	26.6	30.9	
Emergency Services	2 495	3.4	33.2	
Health Management	2 457	3.4	29.1	
Other Units	10 079	13.8	31.0	
<b>Team type</b> ( <i>n</i> = 40 128) <sup>b</sup>				
FHT	29 953	74.6	31.3	<0.001
HHCT/ HHCST	4 282	10.7	38.2	
FHST	3 581	8.9	31.0	
CHA Program	1 857	4.6	29.8	
Other	455	1.2	34.1	
<b>Education level</b> ( <i>n</i> = 161 720) <sup>a</sup>				
High school	28 831	17.8	34.2	<0.001
College	132 889	82.2	31.1	
<b>Course workload</b> ( <i>n</i> = 164 221) <sup>a</sup>				
30 hours	80 927	49.3	40.4	<0.001
45 hours	58 842	35.8	24.3	
60 hours	24 452	14.9	20.2	

**Source:** prepared by the authors from the results of the study.

<sup>a</sup> Since applicants were not required to share all information, some fields were not completely filled; <sup>b</sup> Not all health professionals are part of health teams or work in the public health system health facilities, so these data refers only to those who are working in some of them; <sup>c</sup> chi-square test.  
FHT, Family Health Teams; HHCT, Home Health Care Teams; HHCST, Home Health Care Support Teams; FHST, Family Health Support Teams; CHA, Community Health Agents Program, composed by CHA coordinated by a nurse.

**TABLE 2. Percentage of students by number of course enrollments in the Brazilian Home Care Multicentre Qualification Program, Brazil, 2012-2018**

	Percentage by number of course enrollments (%)				p-value <sup>c</sup>
	1 course	2 courses	3 courses	4 and more	
<b>Gender</b> ( <i>n</i> = 80 775) <sup>a</sup>					
Female	58.3	19.8	10.2	11.7	<0.001
Male	56.7	18.6	11.7	13.0	
<b>Region</b> ( <i>n</i> = 67 425) <sup>a</sup>					
South	55.3	20.9	10.6	13.2	<0.001
Northeast	59.8	19.5	9.5	11.2	
Southeast	58.7	19.4	11.2	10.8	
Center-West	59.0	20.2	10.5	10.3	
North	61.8	18.7	10.2	9.3	
<b>Age group</b> ( <i>n</i> = 80 773) <sup>a</sup>					
18-29	63.7	19.8	9.6	7.0	<0.001
30-39	55.4	19.4	11.4	13.8	
40-49	56.6	19.5	9.9	14.0	
50-59	56.9	19.9	9.8	13.4	
60-more	58.6	20.3	8.3	12.8	
<b>Unit type</b> ( <i>n</i> = 34 248) <sup>b</sup>					
Primary Care	55.4	19.6	10.4	14.6	<0.001
Hospital Care	60.5	18.9	9.4	11.2	
Emergency Services	55.8	20.7	9.4	14.1	
Health Management	56.9	19.6	8.7	14.8	
Other Units	59.1	18.8	9.5	12.6	
<b>Team type</b> ( <i>n</i> = 16 905) <sup>b</sup>					
FHT	53.8	19.2	11.3	15.7	<0.001
HHCT/ HHCST	38.3	17.5	13.0	31.2	
FHST	54.4	21.3	9.1	15.2	
CHA Program	52.3	21.6	9.8	16.3	
Other	47.5	23.7	10.2	18.6	
<b>Education Level</b> ( <i>n</i> = 79 746) <sup>a</sup>					
High school	59.8	20.1	9.2	10.9	<0.001
College	57.7	19.4	10.7	12.5	

**Source:** prepared by authors from the results of this study.

<sup>a</sup> Since applicants were not required to share all information, some fields were not completely filled; <sup>b</sup> Not all health professionals are part of health teams or work in the public health system health facilities, so these data refers only to those who are working in some of them; <sup>c</sup> chi-square test.

FHT, Family Health Teams; HHCT, Home Health Care Teams; HHCST, Home Health Care Support Teams; FHST, Family Health Support Teams; CHA, Community Health Agents Program, composed by CHA coordinated by a nurse.

The courses were launched in sequence, the numbers of enrollments were cumulative, and represented the relationship of students with the evolution of program's new themes. The first course was launched in December 2012 and the last in July 2018. HHCT implementation and HCMQP enrollments over time occurred as a synergic and continuous process (Figure 1).

Figure 2A illustrates the capacity to reach inner cities and even rural and remote health facilities, including the range of the municipalities reached. The distribution of HHCT implemented and enrollments according to the states are presented in Figure 2B and shows coincidence between the states with more teams and the number of professionals enrolled.

## DISCUSSION

Completion rates were the outcome evaluated in MOOC, like HarvardX and MITX. In these initiatives, completion rates were also defined by certification and reached 5.13%, with 1.41 courses per student (16). Evaluating "Completion" as an

outcome can be criticized as learning analysis in SIOC, because an important number of the enrollments is not related to professionals interested in the evaluation or the certification, but professionals with a specific clinical or organizational problem searching for specific answers. Once they find them, they may not go ahead to complete the course.

Alternatively, completion rates can be used as an inner metric to compare behavior among different categories—such as interest in the course—since the professionals who completed it were probably interested in the theme as a whole and not in minor aspects of care or one specific doubt. Another way to evaluate the interest was to compare the number of enrollments as a secondary outcome, as shown in Table 2.

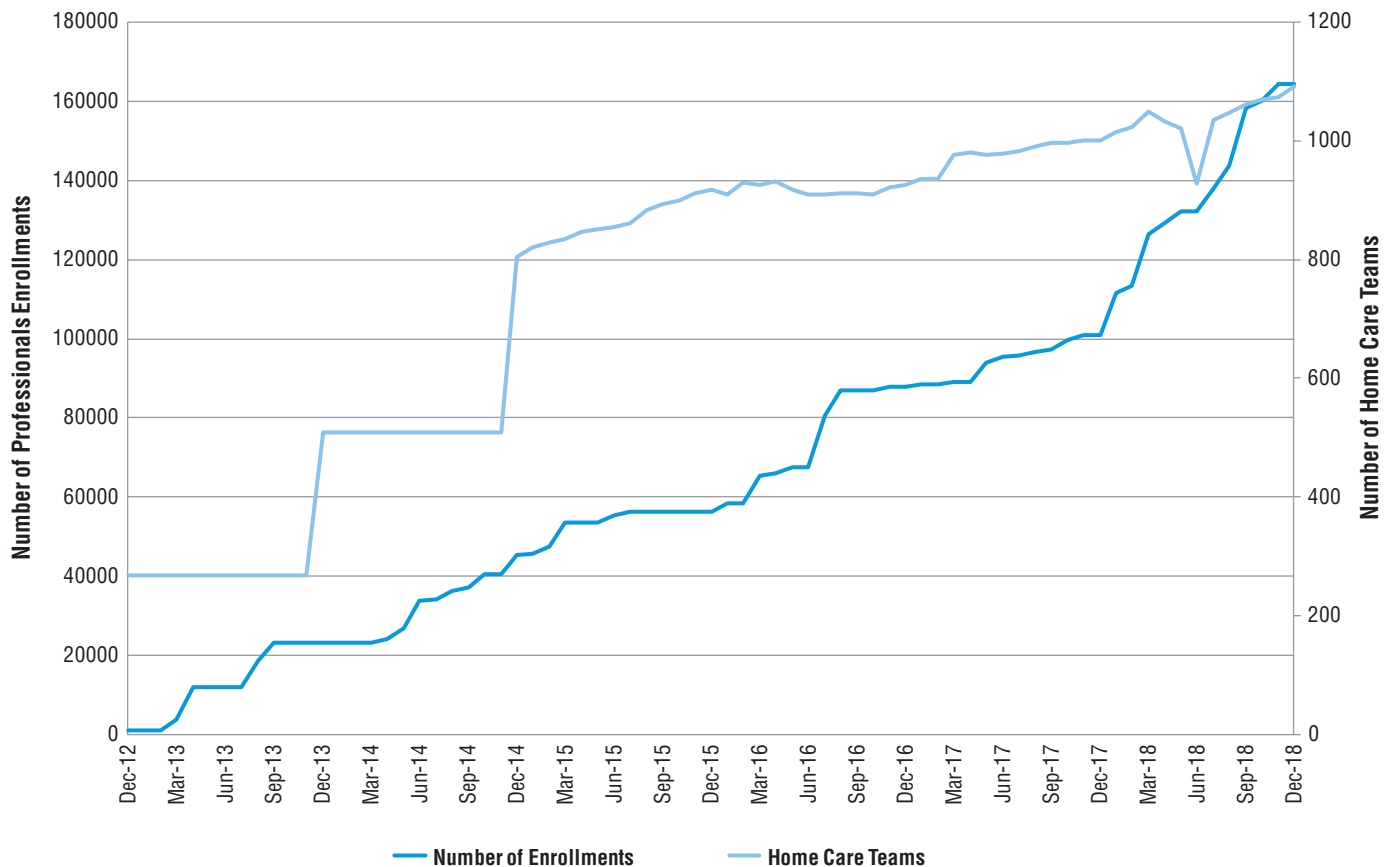
HHCT and HHCST were the most involved teams in terms of completion rates and number of course enrollments, suggesting that SIOCs reached the target audience with useful themes for the applicants. It also reached different audiences, in particular Community Health Agents (CHA) and High School professionals. Since most of the SIOCs targeted a broad range of professions,

**TABLE 3. Completion rates by profession and gender in the Brazilian Home Care Multicentre Qualification Program, Brazil, 2012-2018**

Female	n	%	Completion Rates	Male	n	%	Completion Rates
Nurse	28 399	29.16	24.53	Student	5 211	16.22	36.61
Student	22 888	15.44	30.34	Physician	5 144	16.01	44.5
Nursing Technician <sup>a</sup>	12 938	8.73	33.28	Nurse	4 232	13.17	30.53
Physician	7 845	5.29	46.12	Nursing Technician <sup>a</sup>	1 886	5.88	35.26
Community Health Agents	5 253	3.54	36.68	Community Health Agents	919	2.86	36.34
Physiotherapist	2 027	1.37	31.13	Physiotherapist	555	1.73	34.41
Social worker	1 922	1.3	31.74	Dentist	526	1.64	41.06
Dentist	1 440	0.97	28.75	Psychologist	208	0.65	27.4
Psychologist	1 321	0.89	28.31	Pharmaceutics	128	0.4	32.81
Nutritionist	914	0.62	26.7	Social worker	89	0.28	31.46
Speech therapist	459	0.31	30.72	Speech therapist	78	0.24	50
Pharmaceutics	386	0.26	30.83	Physical Education	69	0.21	31.88
Occupational Therapist	294	0.2	27.55	Nutritionist	50	0.16	32
Physical Education	83	0.06	31.33	Occupational Therapist	37	0.12	29.73
Biomedicine	60	0.04	41.67	Biomedicine	25	0.08	28
Biology	46	0.03	36.96	Biology	18	0.06	38.89
Veterinary	4	0.00	75	Veterinary	4	0.01	50
Unknown	51 215	34.55	26.57	Unknown	11 240	34.98	32.62
Other	10 731	7.24	26.84	Other	1 710	5.32	32.63
<b>Total (female)</b>	<b>148 225</b>	<b>100</b>	<b>28.97</b>	<b>Total (male)</b>	<b>32 129</b>	<b>100</b>	<b>35.36</b>

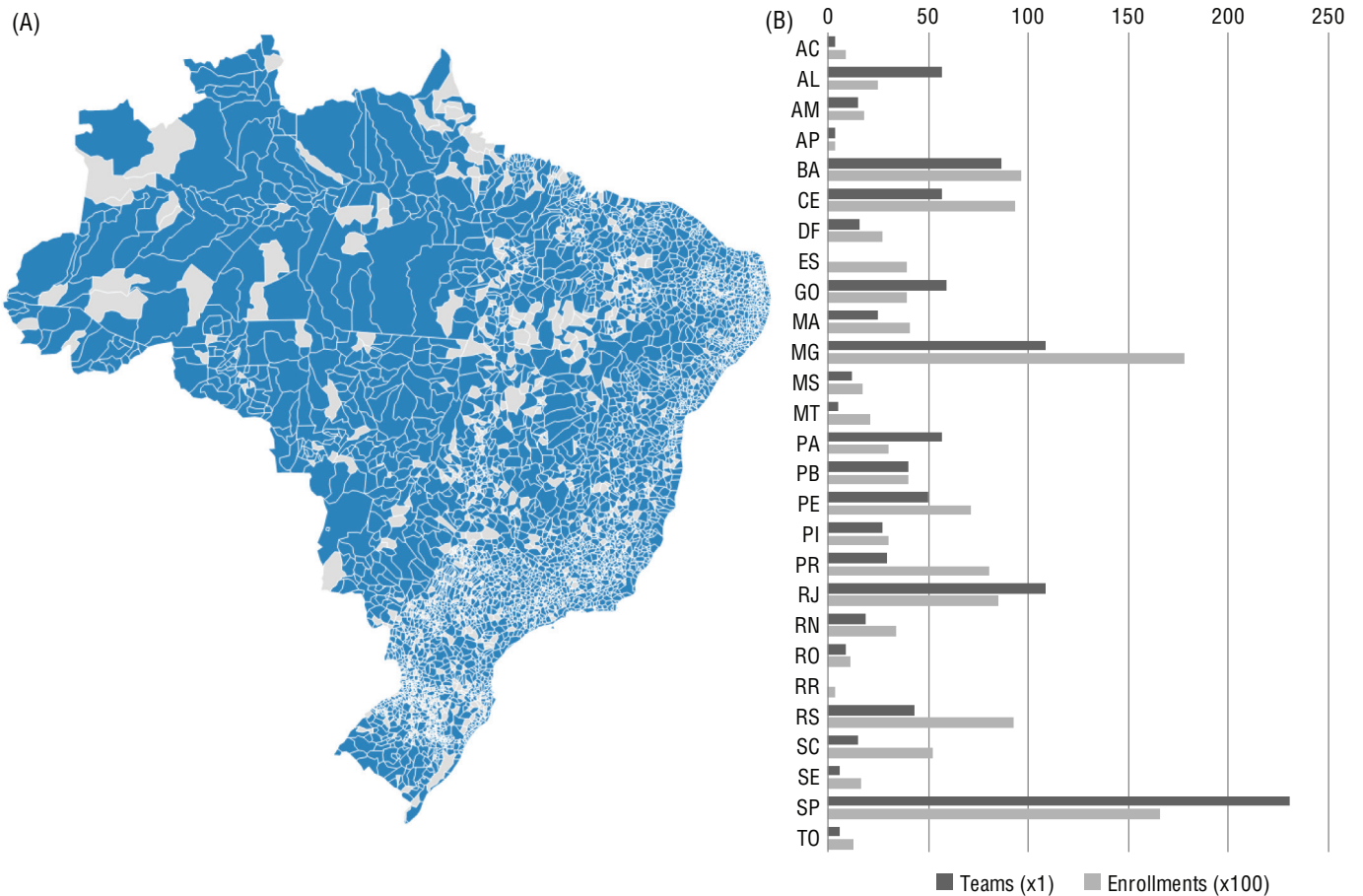
Source: prepared by authors from the results of the study.  
<sup>a</sup> Also includes nursing assistants.

**FIGURE 1. Professional's Enrollments in the Brazilian Home Care Multicentre Qualification Program compared to Home Care Teams Implementation, Brazil, 2012-2018**



Source: Prepared by authors from the results of the study

**FIGURE 2. (A) Geographic distribution by municipality of at least one enrollment in the Brazilian Home Care Multicentre Qualification Program and (B) Distribution by state of enrollments (x100) compared to Home Care Teams Implementation, Brazil, 2012-2018**



**Source:** Prepared by the authors from the results of the study  
 AC=Acre, AL=Alagoas, AM=Amazonas, AP=Amapá, BA=Bahia, CE=Ceará, DF=Federal District, ES=Espirito Santo, GO = Goiás, MA= Maranhão, MG=Minas Gerais, MS=Mato Grosso do Sul, MT=Mato Grosso, PA=Pará, PB=Paraíba, PE=Pernambuco, PI=Piuí, PR=Paraná, RJ=Rio de Janeiro, RN=Rio Grande do Norte, RR=Roraima, RS=Rio Grande do Sul, SC=Santa Catarina, SE= Sergipe, SP=São Paulo, TO=Tocantins.

courses promoted interprofessional learning integrated with the health networks and even interlevel learning, since primary and secondary care professionals were enrolled in the same courses.

When analyzed by gender, there was a small difference in the number of courses taken, as men applied for more courses than women ( $p < 0.001$ ), but completion rates were quite divergent (37.1 *versus* 30.5). This can be related to the women's double shift with domestic and childcare tasks combined with their work in the health field, or by profession differences in terms of completion. When evaluated by professions (table 3), some of them showed important gender differences with higher completion rates for men—such as nurses and students (accounting for 34.6% of female professionals)—. In cases of a smaller discrepancy or when the difference favored women (e.g., among physicians), they accounted for 16.01% of male professionals and only 5.29% of females.

Considering the same gender, female nurses and students may have lower completion rates because of a higher burden than female physicians, possibly because of income differences. The increasing precariousness of the working conditions of nursing professionals, with work overload, low pay and the need to supplement monthly income with activities other than nursing, suggests a true exhaustion of Brazilian nursing

professionals and may explain, in part, the low completion rate in the courses (5,17).

Since physicians have higher remuneration, women in this professional category probably are less overloaded, achieving similar or even higher rates than men. Also, regardless of gender, the way physicians learn is different from other health professionals (18). Finally, since enrollment by gender is not balanced, with 82.2% of women, conclusions should be drawn with caution but the results call for services and a training structure with a gender perspective that considers female workers' needs and the growing feminization of human resources in health (14).

The professionals assessment also showed that CHA are the 5<sup>th</sup> professional category in both genders of SIOCs that were intended mainly for a graduate target audience, and their completion rates were above 36%, as high as other professional categories. The Pan American Health Organization highlighted the role of community health workers in health teams as strategic, and qualifying this workforce can amplify health access, mainly at home visits, an important role of CHA (14).

When analyzed by age group, there was a small but consistent decline in completion rates from 32.8% in the age group 18-29 yr to 31.1% in the 46-50 yr group; older age groups had

a 33.1% completion rate. The drop could be related to progressively “digital native” generations, but this factor alone could be questionable because economic and social factors can impact exposure to technology (19). Also, being a health professional as well reduces the chance of not being exposed to digital resources. The increase in older age groups could be related to the lower enrollment in the two higher age groups (8.5% and 1.8%, respectively), which may be a selection factor for only older adults and seniors with digital literacy, since courses were not a requirement to work on teams (20). The number of courses also rises as the age group changes, except in the 18-29 yr group that includes more “Students” category, probably taking only one course because of a different behavior compared to professionals in terms of educational and certification needs. Those in the “Students” category also had higher completion rates (table 3), and are a focus of UNASUS further analysis because of their unique behavior (21).

The South and South-East are the most economically developed Brazilian regions, and the Center-West and North-East have shown development acceleration in the last decade. Although we couldn't study this variable, lower socio-economic status seems to affect completion rates, mainly among low-income online learners (19). SIOCs were taken in all Brazilian regions and in municipalities of all sizes, with completion rates rising from 29.9% in the North to 37.3% in the South; also, almost 25% of professionals from the South took 3 or more courses. Since remote, rural and under-served areas are far from urban centers, distance learning education sometimes is the only way to reach these professionals and, even with limited internet connection, they were able to enroll and complete courses without traveling to major cities, as shown in Figure 2.

Regional differences can be explained by economic development but also by the number of universities offering HCMQP courses, since 3 out of 8 Universities are located in the South region; there are differences in access to continuous education, technological resources and internet connection. In addition, it can be related to a greater number of HHCT in these regions, since HHCT and HHCST have significant outcomes compared to other teams, both in terms of courses taken (percentage of people taking 4 or more courses almost doubled other teams' figures) and of completion rates (38.2%;  $p < 0.001$ ).

Course sizes showed that online educational strategies have particularities that cannot be ignored. Longer courses have significantly lower completion rates (20.2% for 60-hour courses; 24.3% for 45 hours) than 30-hour courses (40.4%,  $p < 0.001$ ); this supports the hypothesis that when health professionals have the opportunity to access more modular educational opportunities doubts can be solved and also courses can be completed (10, 23).

The specificities and singularities of HHC demand a specific educational strategy construction, with differential skills development. Additionally, HHC professionals or disciplines are not present in health universities, since knowledge is developed mainly from the practice field, which makes the exercise of developing continuing educational resources and strategies even more challenging (7,13). The 3-actor encounters (MoH, UNASUS and its universities) promoted high-level agreements and showed the need to improve integrative practices and to establish an editorial line that could promote visual identity and a similarity of tasks and navigation forms, with a better user experience.

This study had some limitations. As an observational study, it cannot establish a direct cause-effect relationship, and the analysis was carried out in a database not designed for research resulting in some data lacking and less investigation possibilities. In addition, as the available data did not measure progression within courses, the only two outcomes measured were the number of courses and completion rates. The courses had different formats and sizes and target audiences were heterogeneous among courses, which made the analysis more subject to biases. Since there were 7 years since the HCMQP beginning some data might be outdated, which limits the analysis and brings to UNASUS the demand for deepening assessments, seeking better understanding. A better way would be to analyze changes in HHC practices, one of the greatest challenges of the training process, but this is not possible with the data breakdown level. Also, professional change depends on a series of other concurrent factors, such as local management conditions, other team members' adherence to practice changes, available materials and inputs, and health network possibilities, which make these evaluations less possible. Further studies should evaluate the direct impact of courses comparing scenarios between those in which health professionals underwent training, and those who did not.

In conclusion, the training program was able to bring knowledge to different scenarios covering all Brazilian regions, with a direct relationship between the number of enrollments and the implementation of HHCT, which suggests that it fulfilled its mission of inducing the expansion of HHC, providing additionally learning for PHCT to care for their patients at home.

We recommend technology enhanced-SIOCs to reach rural and remote settings to bring educational content and to qualify practices as a continuous education process, since it was an adequate strategy to induce the implementation of a national health policy.

The lowest completion rate for women strongly suggests the need for services to consider a gender perspective and the feminization of health professionals to search for strategies to qualify human health resources, since their dual role at work and at home continues to challenge training services.

HHC demands specific education and continuous training, with skills that are not taught in graduate health courses, few of them in post-graduate specialties and not at all in only one. SIOCs for HHC achieved a wide coverage, as a learning network that reached remote regions nationwide and qualified human health resources from different professions, age groups and educational degrees. Developed with task shifting strategies, skill-based constructed courses and incorporating a broader range of inter-professional's skills, it achieved its results in many ways.

On the other hand, the federal universities challenged to build these SIOCs without HHC professionals on their teaching staff entailed a search by the academic institutions for working field professionals to be content producers, enhancing the university material production and contributing to cover the lack of HHC professionals in their staff. Shifting the educational paradigm is necessary to promote contextual learning for the future health workforce, promoting more extension activities and bringing more culturally adapted and socially relevant professional education.

Evaluation of success by completion rates, professionals *versus* teams' distribution and relationship between enrollment evolution and teams implementation allowed to analyze the

importance of the courses, range and probable utility to the policy implementation. Although we cannot establish a direct cause-effect association, the distribution over time and territory suggests that, as they have the same place distribution and over time behavior, it is possible that part of the courses were taken by these professionals in order to improve their work inside recent HHCT.

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## Estrategias educativas dirigidas a recursos humanos de atención de salud domiciliaria: 8 años de experiencia de Brasil

### RESUMEN

**Objetivo.** Analizar las características, inscripciones y tasas de finalización de los profesionales de la salud inscritos en los cursos de autoaprendizaje en línea del Programa de Cualificación Multicéntrico de Atención Domiciliaria (desarrollado por el Ministerio de Salud de Brasil y la Universidad Aberta do SUS, UNASUS), y su relación con la implementación de Equipos de Atención Domiciliaria.

**Métodos.** Se extrajeron los datos de la base de datos de la plataforma de inscripción de cursos de autoaprendizaje en línea de la UNASUS (2012-2018); estos se cruzaron con los datos de la Base de Datos Nacional de Establecimientos de Salud y se compararon con la base de datos del equipo de Coordinación General de Atención Domiciliaria. Se analizaron las tasas de finalización y el número de inscripciones en los cursos según sexo, edad, región, ubicación, profesión, lugar de trabajo, equipo de salud y tipo de curso.

**Resultados.** Los varones se inscribieron ligeramente más que las mujeres y las tasas de finalización fueron más elevadas (37,1 frente a 30,5,  $p < 0,001$ ); hubo una pequeña disminución en las tasas de finalización según la edad (de 32,8% en el grupo de 18 a 29 años a 31,1% en el grupo de 46 a 50 años,  $p < 0,001$ ) y un aumento en el número de inscripciones en los cursos, probablemente relacionado con generaciones progresivamente más “nativas digitales”. Los cursos tuvieron participantes de todos los estados brasileños y de municipios de todos los tamaños, con tasas de finalización que aumentaron del 29,9% en el norte del país al 37,3% en el sur; los cursos de 30 horas fueron completados por casi el doble de profesionales que los cursos de 45 y 60 horas, lo que sugiere que la modularidad puede mejorar las tasas de finalización. La distribución por estados y la cobertura nacional sugieren un rango adecuado y una coincidencia entre la matrícula de inscriptos y la distribución de los equipos de atención de salud domiciliaria.

**Conclusiones.** Existen factores regionales que influyen en la interacción de los profesionales con los cursos; la feminización de las profesiones sanitarias y las menores tasas de finalización de las mujeres sugieren la necesidad de una perspectiva de género más profunda en los centros de salud y los servicios de capacitación. Los cursos de autoaprendizaje en línea para profesionales de atención de salud domiciliaria fueron una importante estrategia de divulgación, en la que las dudas de los profesionales se resolvieron de manera más contextual.

### Palabras clave

Servicios de atención de salud a domicilio; educación continua; educación; educación a distancia; fuerza laboral en salud; Brasil.

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