






# Institutional capacity for the care of people with chronic diseases in primary health care

*Capacidade institucional para o cuidado às pessoas com doenças crônicas na atenção primária à saúde*

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## ABSTRACT

**Objective:** to investigate the institutional capacity for the care of people with chronic non-communicable diseases in primary health care. **Method:** cross-sectional, quantitative and exploratory study. Data collection used the questionnaire, translated and adapted for Brazil, *Assessment of Chronic Illness Care*. Data collection took place between December 2017 and June 2018. 159 professionals working in 49 primary health care units responded to the instrument. **Results:** the ability to care for people with chronic diseases was classified as basic. The components with the best and worst scores were the design of the service delivery system and clinical decision support, respectively. **Conclusion:** the results of this study showed that it is necessary to invest primarily in expert feedback on counter-reference, partnerships with the community, especially in units that work in the traditional model, and training of professionals to support self-care.

**Descriptors:** Chronic Disease; Quality of Health Care; Self Care; Primary Health Care; Evaluation of Research Programs and Tools.

## RESUMO

**Objetivo:** investigar a capacidade institucional para o cuidado às pessoas com doenças crônicas não transmissíveis na atenção primária à saúde. **Método:** estudo transversal, quantitativo e exploratório. A coleta de dados utilizou o questionário, traduzido e adaptado para o Brasil, *Assessment of Chronic Illness Care*. A coleta de dados aconteceu entre dezembro de 2017 a junho de 2018. O instrumento foi respondido por 159 profissionais que atuavam em 49 unidades de atenção primária à saúde. **Resultados:** a capacidade para o cuidado às pessoas com doenças crônicas foi classificada como básica. Os componentes com melhor e pior nota atribuída foram, desenho do sistema de prestação de serviços e suporte à decisão clínica, respectivamente. **Conclusão:** os resultados deste estudo apontaram que é necessário investir, prioritariamente, em: *feedback* do especialista na contrarreferência, parcerias com a comunidade, especialmente nas unidades que atuam no modelo tradicional e capacitação dos profissionais para apoio ao autocuidado.

**Descritores:** Doença Crônica; Qualidade da Assistência à Saúde; Autocuidado; Atenção Primária à Saúde; Avaliação de Programas e Instrumentos de Pesquisa.

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## INTRODUCTION

Chronic Non-Communicable Diseases (CNCDs) account for 71% of mortality worldwide, 77% of which occur in low- and middle-income countries and affect up to a third of people under 60 years of age. Thus, CNCDs generate direct and indirect costs for society, the health system and individuals due to loss of productivity, hospitalizations due to clinical complications and compromised quality of life<sup>(1)</sup>.

Cardiovascular diseases are responsible for most deaths from CNCDs, followed by cancer, respiratory diseases and diabetes mellitus<sup>(1)</sup>. In Brazil, similarly to other countries, CNCDs are also a public health problem, as they represent 75% of the causes of death<sup>(2)</sup>.

The ability of health services to provide care for people with CNCDs varies widely by region and country income. Despite the existence of national policies, guidelines and protocols that encourage comprehensive care for CNCDs, the lack of adequate funding prevents the policies from being fully implemented<sup>(3)</sup>.

In addition to the issue of (under)financing in Brazil, studies point to an inconsistency between the population's health needs and the organization of the health system. In response to this challenge, in 2011, the Ministry of Health of Brazil launched the guide "Strategic Action Plan for Confronting CNCDs in Brazil: 2011-2020". This guide recommends "Integral Care" for chronic conditions and their risk factors as one of the strategic axes. Among these strategies, the implementation of Lines of Care is highlighted, which use protocols and clinical guidelines based on scientific evidence, linking individuals and caregivers to the primary health care (PHC) team. Thus, ensuring referral and counter-referral to other levels, favoring continuity of care and comprehensive care<sup>(4)</sup>.

In this sense, the most recent evidence of successful experiences in the management of care for people with CNCDs is aimed at changing this reactive model, centered on the complaint/disease, to a proactive, multidisciplinary model, centered on the person and their sociocultural context. This is the Chronic Care Model (CCM). Which proposes a new management of the health condition to obtain more satisfactory clinical results, continuous monitoring, development of the person's co-responsibility for their health and community involvement<sup>(5,6)</sup>.

The CCM was developed by a team of researchers in the United States and has six elements, subdivided into two main axes. The first corresponds to the health care system that integrates five components, namely: health care organization, service delivery system design, clinical decision support, clinical information system and supported self-care. The second axis comprises the articulation with the community and the corresponding component is the community's resources<sup>(6)</sup>.

The Assessment of Chronic Illness Care (ACIC) instrument is one of the instruments used to assess the quality of care provided with the CCM from the perspective of professionals. Which was constituted based on the six elements suggested by the CCM and validated to test its degree of implementation. This assessment tool was developed to help health teams to identify the areas of the health care system or the community that need improvement and, in a second moment, to assess the level and nature of the interventions carried out<sup>(7)</sup>.

Considering that the CCM has been the most used theoretical framework in different countries, including Brazil, the ACIC is considered the most appropriate instrument to measure the degree of implementation of the model from the perspective of health professionals<sup>(6-8)</sup>. In Brazil, the ACIC version aimed at health professionals was validated in 2012. It was applied by a team of researchers from the Laboratory of Innovations in Care for Chronic Conditions coordinated by the Health Information Center (CIS), with support the National Council of Health Secretaries (CONASS), the Pan American Health Organization (PAHO) and the technical advisory services of the Pontifical Catholic University of Paraná (PUCPR)<sup>(8)</sup>.

Despite the wide discussion, in Brazil there are still few studies in the literature that assess the implementation of the CCM in PHC<sup>(8,9)</sup>. So far, in the state of Rio Grande do Sul, no studies were found that showed the perception of PHC professionals regarding the institutional capacity for the care of people with CNCDs from the perspective of the CCM. Therefore, the aim of this study was to investigate the institutional capacity for the care of people with chronic non-communicable diseases in primary health care.

## METHOD

### Type of study

This is a cross-sectional, quantitative and exploratory study.

### Scenario

The study was carried out at the PHC in the city of Pelotas/RS, Brazil. The PHC service network in Pelotas was implemented in the 1980s and currently consists of 51 Basic Health Units (UBS's) distributed in six administrative health districts (DS), five located in the urban area (DSI to DSV) and one in the rural area (DSVI). The city's urban region has 38 UBS's, 25 of which adopt the Family Health Strategy (FHS) model, nine UBS's work in the traditional model and four are mixed (they have with two care models: the FHS and the traditional model). The rural region has 13 UBS's, ten adopt the FHS model and three are traditional. The total coverage of services and actions of the FHS teams corresponds

to 69.2% of the local population. The study covered 49 units that represent 96.1% of the UBS's in the city.

## Selection criteria

Nurses and doctors who worked in PHC for a minimum period of two months or more were included in the study.

Professionals who were away from the health service due to vacations or sick leave during the data collection period were excluded from the study.

## Sample

The total study population consisted of 211 professionals (119 general practitioners and 92 nurses) linked to the 49 participating PHC units. After applying the selection and invitation criteria, the sample consisted of 159 professionals (80 general practitioners and 79 nurses). The refusal rate to participate in the study was 8.7% for nurses and 22.7% for doctors, and the exclusion rate was 5.4% for nurses and 10.1% for doctors. Therefore, the participation rate was 75.4%.

## Data collection

Data collection took place from December 2017 to June 2018 and was conducted by three trained researchers. Participants were approached in person. The instrument used was printed and composed of 28 self-administered questions that address the six fundamental elements of the CCM, distributed as follows: organization of health care (six items), community resources (three items), supported self-care (four items), clinical decision support (four items), design of the care system (six items) and clinical information system. In addition to sociodemographic data related to professional training. The average duration of filling out the instrument was 25 minutes.

## Analysis and treatment of data

The interpretation of the ACIC instrument was made through the score obtained by the simple arithmetic mean of its components. The lowest score, a score between  $\geq 0$  and  $\leq 2.4$  (level D) corresponds to a location with "very limited"

capacity to care for chronic conditions. A score between  $> 2.5$  and  $< 5.4$  (level C) corresponds to a "basic" ability. A score between 5.5 and  $< 8.4$  (level B) corresponds to a location with "reasonable" capacity. Finally, the highest score, between  $> 8.5$  and  $< 11.0$  (level A), indicates a location with "optimal" capacity"<sup>(7)</sup>.

The variables selected for this study were pre-coded, independently double-entered into the EpiData version 3.1 program. After checking and correcting the typing errors, the data were stored in the SAS (Statistical Analysis System) version 9.3 program.

## Ethical aspects

In each visit, the professionals were approached individually, in a private environment, informed about the objective of the research and then invited to participate in the study. Upon acceptance, the Free and Informed Consent Form (FICF) and the ACIC instrument, self-applied, were given to the professional. The ethical principles used in this study met the guidelines of Resolution No. 466/12 of the National Health Council<sup>(10)</sup>. This study was submitted to the Research Ethics Committee of the Universidade Federal de Pelotas and approved under Opinion No. 2.403.534/2017 and CAAE No. 79860617.2.0000.5316.

## RESULTS

The number of participants was 159 professionals, among them, 79 (49.7%) were nurses and 80 (50.3%) were doctors. Among the doctors, 41 (51.2%) were linked to the "More Doctors" program, 33 (80.5%) of whom had been trained in Brazil and eight (19.5%) in Cuba. Most participants were female, 112 (70.4%), the most frequent professional relationship was through public contest, 101 (63.5%), 32 (20.1%) were scholarship holders and 26 (16.4) worked with a Fixed-term employment contract.

Table 1 presents the municipality's overall assessment for each component of the ACIC instrument.

**Table 1.** Classification of primary care by the ACIC dimensions (n = 159). Pelotas, RS, Brazil, 2017 – 2018.

ACIC Components	Average	IC95%	Classification
Health care Organization	5.4	5.0 – 5.8	Basic
Articulation with the community	5.0	4.3 – 5.7	Basic
Supported self-care	6.2	5.7 – 6.7	Reasonable
Clinical decision support	4.6	4.3 – 5.1	Basic
Service delivery system design	6.7	6.3 – 7.3	Reasonable
Clinical information system	4.9	4.3 – 5.5	Basic
Model Integration	4.8	4.4 – 5.5	Basic
Primary care capacity	4.7	4.3 – 5.1	Basic

Table 2 shows the average assessment of the ACIC instrument by health district.

**Table 2.** Averages and classification of the ACIC assessment by health district (n = 159). Pelotas, RS, Brazil, 2017 – 2018.

District	Health care organization	Articulation with the community	Supported self-care	Clinical decision support	Service delivery system design	Clinical information system	Model Integration	Total
DSI	5.3	5.5	6.9	4.7	6.8	4.6	4.6	5.5
DSII	5.9	5.4	5.9	4.9	7.1	5.1	5.0	5.6
DSIII	4.5	2.7	5.1	3.3	5.4	3.8	3.5	4.0
DSIV	5.6	5.1	5.8	4.9	6.3	4.4	5.0	5.3
DSV	5.2	4.6	6.0	4.7	6.6	4.4	4.4	5.1
DSVI	5.7	5.9	7.0	4.9	7.4	6.2	5.8	6.1

Caption: (DSI: Três Vendas; DSII: Três Vendas; DSIII: Centro/Porto; DSIV: Fragata; DSV: Areal/Laranjal; DSVI: Colônia). Averages between > 0 and < 2.4 “limited”, > 2.5 and < 5.4 “basic”, > 5.5 and < 8.4 “reasonable”, and > 8.5 and < 11.0 “optimal”.

## DISCUSSION

The results of this study highlight wide variability in the assessment of institutional capacity for the care of people with DCNT. On the one hand, the results pointed to difficulties in the integration of care actions. On the other hand, there was a better perception of care practices among professionals linked to the restructuring programs of the fragmented model of health care that is still in force.

The application of the ACIC instrument in the USA showed that the average scores of the teams ranged from 4.36 (information systems) to 6.42 (care organization)<sup>(7)</sup>.

In Germany, the organization of care for people with type 2 diabetes mellitus in the city of Zurich was assessed. The mean ACIC subscale scores were: organization of the health care system: mean (m) = 7.31 (SD = 0.79), articulation with the community: m = 3.78 (SD = 1.09), supported self-care: m = 4.88 (SD = 1.21), decision support: m = 4.79 (SD = 1.16), service delivery system design: m = 5.56 (SD = 1.28) and clinical information system: m = 4.50 (SD = 2.69)<sup>(11)</sup>.

The application of ACIC in Chile found that the overall ACIC score was 5.9 ( $\pm$ 1.5); therefore, characterized as basic support, with the organization component of the service delivery system design having the best score of 7.2 ( $\pm$  1.5). The lowest scores correspond to the integration of components 4.7 ( $\pm$  1.9) and clinical decision support 4.8 ( $\pm$  2.0)<sup>(12)</sup>.

In Brazil, the experience of implementing the CCM in Curitiba for three PHC teams was assessed through the application of the ACIC in two moments. In the initial phase, the mean of the total score at baseline was 5.9, with the best rating for the integration of components (7.6) and the worst score for the articulation with the community (4.3). At the end of the intervention, the most important components

that showed a tendency towards improvement were the articulation with the community, clinical decision support and the service delivery system design<sup>(8)</sup>.

Likewise, the assessment of the implementation of the CCM in five PHC units in Mexico through the ACIC showed that the institutional capacity for the care of people with CNCDS increased from 5.7 at the start to 8.7 at the end of the intervention<sup>(13)</sup>.

A study carried out with 30 professionals working in five PHC teams in the capital of Mato Grosso do Sul found assessment averages slightly higher than the present study, with the capacity of the health system being assessed as “reasonable” with an average of 6.8. The best rated component was “service delivery system design” (8.6); and the one with the worst score was the “clinical information system” (4.1). Above all, there was also variability in the results with a range of means between 3.1 and 9.0<sup>(9)</sup>.

The variability of results found in this study can be explained by different factors: presence of a mixed PHC model (traditional and FHS), presence of units working under different organizational bonds, presence of the “More Doctors” program and disconnection between the experienced reality and the actual aspects of the CCM, as detailed below.

The first factor refers to the finding that PHC in Pelotas still has a mixed model of health care: the Family Health Strategy model – considered a strategy for transforming the care model, with a proposal to replace traditional care practices – and the traditional teams. In addition, health units have three different organizational links: Municipal Health Department, Federal University of Pelotas and Catholic University of Pelotas.

Likewise, the existence of the “More Doctors” program influenced the variability of results. In this sense, the inclusion of professionals with differentiated training and continuous supervision contributed to significant differences in the perception of care practices<sup>(14)</sup>.

Difficulties in engaging the health unit with the community are not just a local reality, studies carried out in two other Brazilian municipalities showed similar results<sup>(8-9)</sup>.

In the same sense, a study carried out in the United States showed that there are few evidence-based interventions characterizing the articulation with the community in the care of CNCDs in PHC. After these results, the authors of that study concluded that the absence of this type of intervention was due to the lack of action assessment tools, especially among needy populations<sup>(15)</sup>.

Considering this panorama, the relevance of maintaining and expanding partnerships between the community (residents, schools, churches, colleges, associations) and the health unit becomes evident to expand the unit’s resolving capacity, reduce rework and the overload of professionals, and encourage the co-responsibility of individuals in the construction of new lifestyle habits.

In a coherent and purposeful way, from the CCM’s point of view, the “supported self-care” component stands side-by-side with the community. In general, self-care is provided through educational activities (individual or in groups), but without using specific behavior change methodologies. Linked to this, the assessment of professionals showed that training actions in services are carried out sporadically and using traditional teaching methodologies. It is understood that, to have a paradigm shift that goes beyond the logic of the biologist model to a care model that articulates the different services in the network and that calls for the participation of people in the construction of their health, it is necessary to innovate the methodologies of teaching and health practices<sup>(16)</sup>.

A study carried out in Canada approached doctors, users, managers and researchers linked to PHC with the objective of understanding the facilities and barriers related to the implementation of an individual care plan. The main advantages were related to effectiveness in motivating behavior change and promoting primary prevention. The main barriers found were: complexity and cost evidenced by the amount of paperwork and the time needed to collect information; the cost was negatively assessed by doctors and positively assessed (considering the impact of preventing complications) by nurses, managers and researchers. Therefore, the study results showed differences in the professionals’ perceptions regarding the advantages and disadvantages of using an individual care plan<sup>(17)</sup>.

Considering that nurses are the most suitable professionals for care planning, a study identified the most effective self-care guidelines provided by these professionals. It was

concluded that the best classified intervention components and contextual factors were: empowering users, family members and caregivers for self-care; ensure that users, family members and caregivers are aware of the need to attend to appointments and the home care plan; standardized record of effective communication guidelines and strategies; the presence of strong leadership, alignment of the strategic plan and structures that favor proactivity and behavior change in elderly people with complex health conditions<sup>(18)</sup>.

Regarding clinical decision support, the participation of the specialist, in most cases, is limited to referring the user through the reference, without a written counter-reference and without the participation of the specialist in the training of PHC professionals.

Regarding the intervention possibilities for the “clinical decision support” component, it is worth emphasizing the existence of successful experiences in the municipality. Thus, in the comparative analysis of the performance of professionals, it was found that doctors from the “More Doctors” program trained in Cuba and doctors linked to this program with training in Brazil scored significantly higher in this component. This finding suggests that ongoing in-service education, ongoing supervision, the use of performance assessment tools with feedback are effective strategies to improve the professionals’ perception of the “clinical decision support” component.

Corroborating, the most recent evidence affirms that practice-based learning is very useful, especially when it integrates academia and health services, because the experiences brought to reflection are present in real situations. In addition, research applied to care practice produces more useful evidence for the area of public health<sup>(19)</sup>.

A more complicated challenge for improving this component concerns the involvement of the specialist. It is noticed that the cases referred to the specialist do not return with counter-reference and there is also little involvement of the specialist in the training of professionals in PHC. In this sense, previous studies also pointed out the need to implement a matrix support device, to establish a new type of interrelationship between the general practitioner and the specialist doctor so that the line of care for chronic diseases is made viable in a network articulated services. In a permanent joint discussion of work processes, aiming at a fundamental and close collaboration between specialist and primary level<sup>(20)</sup>.

The individual self-application of the questionnaire restricted to nurses and doctors, without including the consensus of other professionals working in PHC units, can be pointed out as a limitation of the present study. However, such findings provide support for the awareness of managers about the investment in professional training and clinical management tools, combined with shared care between the

PHC, the community and the specialist. These factors can positively impact the results of care for people with chronic diseases in the city of Pelotas.

## CONCLUSION

This study showed that there are specific weaknesses and strengths in the ability of PHC to promote care for people with CNCs. According to the incapacities of the care actions evidenced by the PHC professionals, especially related to the deficit in decision support, clinical information system and articulation with the community, there was a need to invest. Investment should be mainly made in reviewing organizational goals, partnerships between the health unit and the community, articulation of local health councils, expert feedback on counter-reference, continuing education through the use of active teaching methodologies, to train the professionals to support self-care and behavior change towards a healthier lifestyle.

The perceived deficiencies were minimized for professionals linked to health units that are part of the "More Doctors" program and maximized for professionals who worked in traditional health care units. Considering the differences observed, it is recommended to expand the use of techniques such as continuous monitoring through collaborative supervision, expand access to technical-scientific improvement for professionals, and promote systematic performance assessment. These strategies can be effective to improve the perception of professionals who work in traditional units in relation to the care of people with chronic diseases.

Furthermore, the participation of professionals in the research constituted an important moment of reflection and critical assessment of the actions taken and the possibilities for change if all involved actors were engaged: health managers, leaders, professionals from different levels of care, users, family and community.

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