



SUMMARY: ADAPTING AND VALIDATING THE PRIMARY HEALTH CARE ASSESSMENT TOOL IN COLOMBIA

USAID Local Health System Sustainability Project (LHSS)

Task Order I, USAID Integrated Health Systems IDIQ

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The USAID Local Health System Sustainability Project

The Local Health System Sustainability Project (LHSS) under the USAID Integrated Health Systems IDIQ helps low- and middle-income countries transition to sustainable, self-financed health systems as a means to support access to universal health coverage. The project works with partner countries and local stakeholders to reduce financial barriers to care and treatment, ensure equitable access to essential health services for all people, and improve the quality of health services. Led by Abt Associates, the five-year project will strengthen local capacity to sustain strong health system performance, supporting countries on their journey to self-reliance and prosperity.

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ACRONYMS

DPSAP	<i>Dirección de Prestación de Servicios y Atención Primaria del Ministerio de Salud y Protección Social / Ministry of Health and Social Protection's Directorate of Primary Healthcare Services</i>
IA- PCAT	Primary Care Assessment Tool's questionnaires for Ibero-America
IA-PCAT-AE	Primary Care Assessment Tool's adult questionnaire
IA-PCAT-CE	Primary Care Assessment Tool's questionnaire for adult caregivers of children and adolescents
IA-PCAT-FE	Primary Care Assessment Tool's questionnaire for health managers
IA-PCAT- EP	Primary Care Assessment Tool's questionnaire for health clinicians
MSPS	<i>Ministerio de Salud y Protección Social de la República de Colombia / Colombia's Ministry of Health and Social Protection</i>
LHSS	Local Health System Sustainability Project
PCAT	Primary Care Assessment Tool
PHC	Primary Health Care
PHCPI	Primary Health Care Performance Initiative
USAID	United States Agency for International Development

I. INTRODUCTION

This document describes the interventions implemented by the Local Health System Sustainability Project (LHSS) to evaluate and modify the Primary Care Assessment Tool (PCAT) for Colombia and create an application to compile and analyze data from the tool's surveys. This tool and its application will help health providers to access data on Primary Health Care (PHC) services, which can be used to improve decision-making and policy formulation within the health care sector. This is an English language summary of the full report, which is available in Spanish.

Objective

LHSS developed this report with the following objective:

- Modify the PCAT and verify that it is suitable for the Colombian context, to identify and monitor progress in providing PHC services.

Problem statement

This intervention emerged from the Colombia Ministry of Health and Social Protection's (MSPS)'s Directorate of Primary Healthcare Services (DPSAP)'s interest in monitoring the implementation of Colombia's PHC strategy. The DPSAP had been looking for tools to monitor the management and performance of primary care services, and had considered using PCAT. MSPS requested LHSS Colombia's support to modify and validate the PCAT for use in Colombia, a process that required the creation of a PCAT software application to facilitate the analysis of data generated by the PCAT tool.

2. METHODOLOGY

The PCAT tool includes a collection of four surveys standardized for Ibero-America denominated as IA-PCAT. Two surveys target service users: one addresses adults (AE), and the other targets caregivers of children and adolescents (CE). Additionally, two surveys address two groups of service providers: management staff (FE) and clinical staff (EP). These surveys can be conducted among the general population of service users and staff. Specific designs can allow the perceptions of primary care services among the general population to be compared to perceptions among the migrant and host communities. Table I summarizes the four steps for achieving this intervention's objectives.

Table I. Summary of the intervention

Steps	Population ¹	Sample Size	Analysis
First step: Validating the content	In each of the selected cities:	Total	
Phase 1: Experts' validation	A doctor, a nurse, and a nursing assistant.	18	Qualitative: Cognitive interviews. Statistical: Acceptability index
Phase 2: Community validation	People who have had experience with outpatient services for themselves or their children. Includes migrant and host populations.	24	Qualitative: Cognitive Interviews
Second step: Developing the application (collecting information)	Develop the PCAT application.		
Third step: Ensuring validity, internal consistency, and reliability of IA-PCAT surveys	Conduct the IA-PCAT surveys (AE, CE, FE, and PE) in the target population of each selected city.		
IA-PCAT-AE surveys	Adults who have had at least six months of experience with healthcare services (AE Adult users).	276	Quantitative: Cronbach's alpha ²
IA-PCAT- CE surveys	Adult caregivers whose children or adolescents have had at least six months of experience with healthcare services (CE Adult caregivers).	276	Quantitative: Cronbach's alpha
IA-PCAT-FE surveys	Staff carrying out administrative functions related to health care services, coordinators of health centers or PHC programs in health centers or entry point ambulatory care providers (primary health care providers as established in the	138	Quantitative: Cronbach's alpha

¹The population from the six cities selected to implement this project: Barranquilla, Bogotá, Bucaramanga, Cúcuta, Medellín, and Riohacha.

²Cronbach's alpha coefficient quantifies the reliability of a scale that meets two requirements: a) It include a set of items, the scores of which are added to calculate an overall score, and b) the scores of all item are measured in the same direction (Ramada-Rodilla JM et al. 2013). This internal consistency method estimates the reliability of a measurement instrument composed of a set of elements expected to measure the same construct or a single theoretical dimension of a latent construct (Frias-Navarro, D. 2021). Generally, a score above 0.7 denotes good reliability and internal consistency.

Steps	Population ¹	Sample Size	Analysis
	Comprehensive Healthcare Policy). (FE Managers or senior managers).		
IA-PCAT- PE surveys	PHC health teams delivering entry point ambulatory care services (primary healthcare providers as established in the Comprehensive Healthcare Policy). (PE Providers: doctors, nurses).	138	Quantitative: Cronbach's alpha
Fourth step	Analysis of the collected data, including the data provided in the analysis column of this table. Discussion of the results from the survey implementation and how they can be used to evaluate PHC in Colombia's General System of Social Security in Health. This analysis requires a second component of qualitative analysis.		

Limitations

Although the sample size used in this pilot displayed differences between cities and between the perceptions of users and health professionals, it served to test the feasibility of the PCAT in Colombia. This process did not intend to identify significant differences or to perform interdisciplinary analyses. It would be useful, however, to conduct such studies in the future.

3. RESULTS, RECOMMENDATIONS, AND LESSONS LEARNED

During the first phase of content validation, LHSS Colombia gathered insights on the survey's content through interviews with a doctor, a nurse, and a nursing assistant acquainted with the local or regional uses of the tool in six selected pilot cities. Phase II benefited from the participation of the community, including the migrant, indigenous, and Afro-Colombian populations, most of whom had received a primary education. The cognitive interview reviewed the understanding of terms to detect possible regional difficulties in comprehending the questions. The information gathered in these phases served as an input to the discussions held at the co-creation meetings carried out to verify the surveys for internal consistency and reliability.³

Results

First step: content validation

LHSS validated the content of the IA-PCAT AE and CE surveys based on the acceptance index of experts and the cognitive interviews of experts and the community. Most questions received acceptance rates of

³Cognitive interviews assess the sources of error in questionnaire responses. Therefore, they focus on the cognitive processes underlying the answers offered by the respondent (interviewee).

over 70% and they did not require changes according to the experts' assessment. Questions with an acceptance below 70% were adjusted (Tables 2 and 3). Certain questions were also adjusted based on the cognitive interviews, the recommendations of the IA-PCAT partnership, and the discussions held in the co-creation meetings.

Table 2. IA-PCAT-AE Global Acceptability Indices for questions below 70% addressing health workers

Code	Question	Quantity	Percentage
N3	What is your gender identity?	10	55.6%
A6	Is it an emergency or on-call service?	11	61.1%
B3	When you need to visit a specialist, does such [HEALTH CENTER*] need to REFER you* using a REFERRAL SHEET*?	11	61.1%
A7	Is this health center part of a public, private or social security institution?	12	66.7%

Source: Prepared by the authors

Table 3. IA-PCAT-CE Global Acceptability Indices of questions below 70% addressing Health Workers

Code	Question	Quantity	Percentage
N9	What is your gender identity?	8	50.0%
N3	What is the gender identity of NAME-N/A?	11	61.1%
A6	Is it an emergency or on-call service?	11	64.7%
A7	Is this health center part of a public, private or social security institution?	12	66.7%

Source: Prepared by the authors

In total, four distinct questions were modified from the IA-PCAT-AE and IA-PCAT-CE surveys. In addition, five questions required modification based on the cognitive interviews with community members, and five others required modification based on discussions held at the co-creation meetings. In short, 14 out of the 125 questions (11%) included in the surveys required modification.

Second Step: Developing the application to collect information

LHSS Colombia developed a software application to collect data from the four surveys. The application consists of two software components that generate descriptive statistics directly from the application, bar charts, and databases in Excel format that enable in-depth statistical analysis according to the PCAT instructions. Examples of the software application and descriptive statistics are shown below in Figures 1 and 2, respectively.

Figure 1. Example of PCAT software application

MINISTERIO DE SALUD Y PROTECCIÓN SOCIAL

Encuestas Salir

Atrás

Responses
Please review and submit data

Submit data

A. Identifying primary health providers

A1. Is there a HEALTH CENTER or professional to whom you commonly visit when you are ill or in need of health advice? Yes/CDC/Bogotá

A2. Is there a HEALTH CENTER or professional that knows you and your family personally? Yes, please refer to A1.

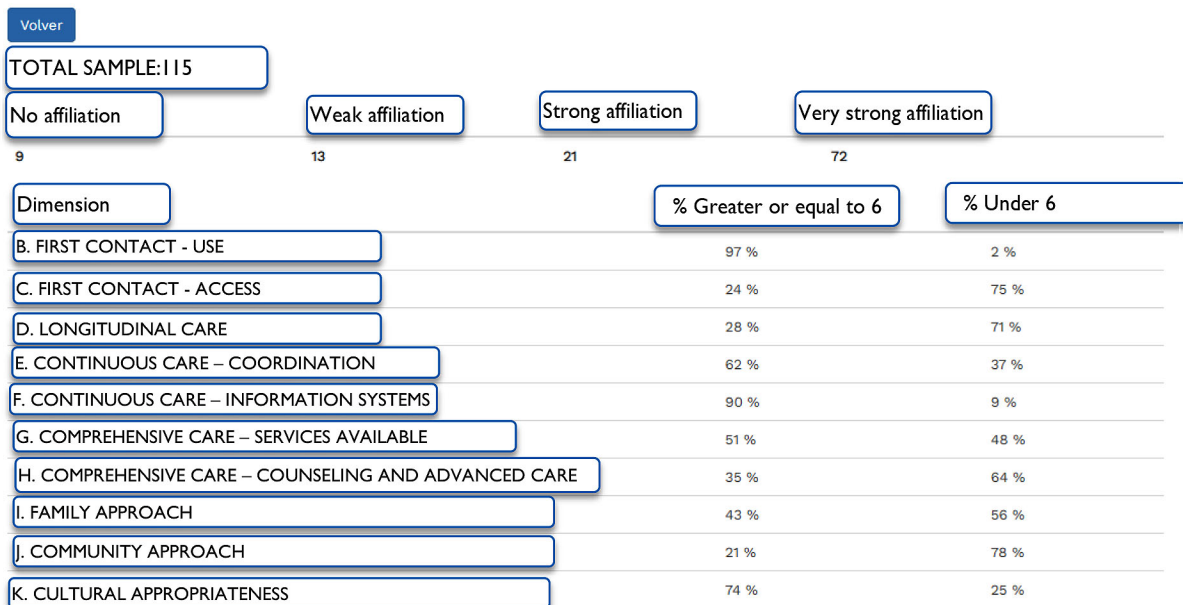
A3. Is there a HEALTH CENTER with a higher level of responsibility in caring for your health? Yes, please refer to A1.

A4. Which was the last professional or HEALTH CENTER that you visited? CMC/Bogotá

According to the previous answers, YOUR PRIMARY HEALTHCARE PROVIDER is: CMC

A5. What type of establishment is this HEALTH CENTER? A health center, a primary healthcare center, a community healthcare center

Figure 2. Example of descriptive statistics



Third step: Validity, Internal Consistency, and Reliability of IA-PCAT surveys

The AE and CE surveys underwent validation for internal consistency. Nine of the ten dimensions had a Cronbach's Alpha over 0.7. The Cronbach's Alpha for dimension "B. First Contact – Utilization" was below 0.7. However, when dimension B was combined with the other "first contact" dimension "C. First Contact – Accessibility", the two dimensions met the score required for internal consistency.

The AE and CE surveys overall had a Cronbach's Alpha score of 0.957 and 0.962, respectively, meaning that they are internally consistent.

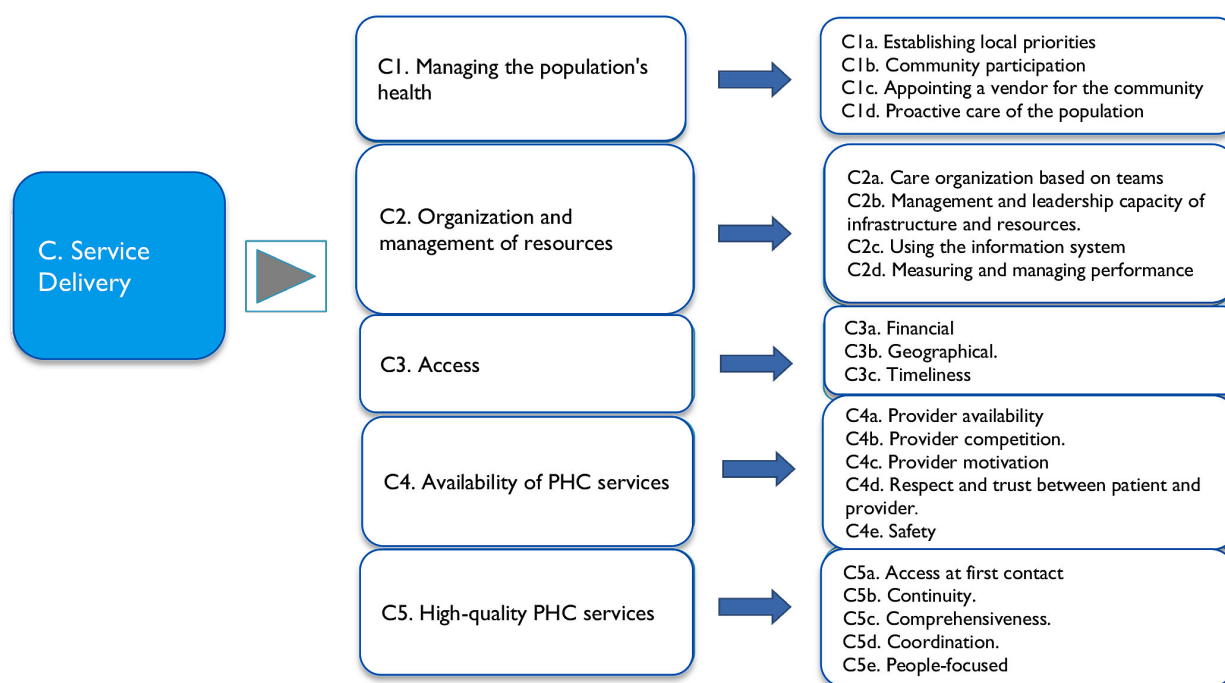
In the PE and FE surveys, all nine dimensions had a Cronbach's Alpha greater than 0.7. The AE and CE surveys overall had a Cronbach's Alpha score of 0.976 and 0.985, respectively, meaning that they are internally consistent.

LHSS Colombia modified and validated the four surveys for their application in Colombia and they are now available to the MSPS.

Fourth step: Information Analysis

In the fourth step, LHSS conducted a literature review of how the PCAT can be used to inform policy. The project also analyzed the information collected during the validation process to demonstrate how the PCAT can be applied in Colombia. PCAT surveys provide information for the PHC service delivery domain of the Primary Health Care Performance Initiative (PHCPI), designed by the World Bank and adopted by the WHO. The PCAT provides information on the quality, availability, and effective access to PHC services, and information on how other domains affect the perspective of healthcare service users and human resources for health.

Figure 3. PHCPI service delivery domain



Based on the literature, the uses of the PCAT tool include:

- Measuring a baseline and monitoring the implementation of a new model.
- Improving performance through a health system reform process.
- Comparing different models, regions, or healthcare providers.
- Determining specific measurements of PHC functions.
- Evaluating PHC weaknesses and strengths.
- Assessing initiatives for improving PHC.

The comparison of cities in Table 4 is one example of how the PCAT can be applied.

Table 4. Comparison of scores by dimension between cities

PHC functions assessed	City 1	City 2	City 3	City 4	City 5	City 6	Total
B. First Contact – Use	9.4	9.93	9.9	9.86	8.97	9.95	9.67
C. First Contact – Accessibility	6.92	7.25	4.13	5.82	6.74	4.41	5.87
D. Longitudinal Care	7.07	8.14	6.19	4.68	5.45	5.24	6.12
E. Continuous Care – Coordination	1.32	5.35	6.86	1.54	3.51	6.01	4.11
F. Continuous Care – Information Systems	9.3	9.86	9.7	8.75	7.81	9.66	9.18
G. Comprehensive Care – Available services	7.00	7.99	7.02	7.12	7.36	7.17	7.28
H. Comprehensive Care – Counseling and advanced care	5.33	8.21	6.31	5.19	6.01	5.37	6.07
I. Family Approach	6.54	9.25	6.93	3.84	5.24	7.61	6.56
J. Community Approach	4.37	7.59	6.15	4.21	5.11	3.45	5.15
K. Cultural Appropriateness	9.48	9.13	9.00	6.51	7.49	9.2	8.46

Source: Prepared by the authors

Table 4 shows how to compare the scores of the PHC dimension based on a 10-point scale in the cities where the instrument was applied. The PCAT tool also facilitates a comparison of results of different sub-populations of interest. For example, it is possible to compare the scores of PHC services provided to those with the contributory insurance scheme and subsidized scheme, compare migrant and host populations' experiences with PHC services with that of other populations, and compare scores from rural areas with those from urban areas.

Lessons learned for applying the PCAT tool

- Each healthcare provider has different administrative processes, meaning that the time required for providers to grant authorization to conduct the surveys or provide access to information can vary significantly. It is vital to plan additional time to complete the application of the PCAT tool.
- The literature suggests a 30-minute completion time for the surveys. However, these times may vary based on the learning curve of those implementing the surveys. Since this intervention used a software application to conduct the survey, the time it takes both the surveyor and the respondent to learn to use the application needs to be considered. In this pilot, times ranged from 25 to 45 minutes to complete the AE and CE surveys, and between 15 and 40 minutes for the PE and FE surveys.

- Using a software application made it easier to apply the PCAT tool because it allowed the surveyors to collect information directly, saving time during data collection and analysis.
- It is essential to raise awareness about the benefits of applying the PCAT tool and to send out reminders to increase the participation of the target population (communities and human resources for health).
- For any project delivering software applications to the MSPS, it is crucial to know the MSPS' Office of Technology and Communications infrastructure requirements before beginning the project.
- It was helpful that the MSPS provided clear guidelines for defining tools that will be used nationally to strengthen decision making in health policy.

Recommendations

For managing the adaptation and validation process

- Disseminate the results of the process of adapting and validating the surveys, as these efforts can serve to encourage expanded use of the tool.
- Training the survey team on the surveys' content and their role in the survey process is vital. This training should also include how the teams should respond to challenges that arise when conducting the survey.
- The managers of health care providers must encourage their teams to use the software application, as the application allows teams to conduct a large quantity of surveys in a short period of time.

For Human Resources for Health

- Health care workers need to be informed about the importance of carrying out PCAT surveys. They should have a space to fill out the survey and discuss the results, allowing them to contribute solutions to the improvement plans.

For decision-makers

- It is critical to have a multidisciplinary team so that individuals with different backgrounds (family medicine, epidemiology, public health, biostatistics, sociology) can conduct an in-depth analysis of the results obtained through the surveys. Information collected will only support the evaluation of PHC functions to the extent that the methodologies and sample sizes used are appropriate for answering the desired research question. It is also possible to encounter differences in perception between users and health professionals. Therefore, it will be necessary to analyze both perspectives and include them in the proposed improvement plans.

4. USING THE ADAPTED PCAT IN COLOMBIA

The goals of the *Sustainable Health Agenda for the Americas 2018-2030* include strengthening health information systems to support the performance evaluation of health systems. These goals also promote the monitoring of health systems' performance against their objectives.

LHSS Colombia provided four surveys to strengthen the analytical capacity for decision-making and policy formulation in health: IA-PCAT AE, CE, FE, and PE. These surveys were adapted and validated for Colombia to assess PHC performance in the country. A software application collects data from the four

surveys through a standardized system. This system guarantees the availability and reliability of data, thus allowing the comparison of gathered data with other sources of information. The DPSAP expressed interest in using the PCAT tool as part of a PHC performance assessment, which will be made available to stakeholders at the national and local levels.