

# Assessment of access to primary health care among children and adolescents hospitalized due to avoidable conditions

ANA PAULA SCOLEZE FERRER<sup>1\*</sup>, SANDRA JOSEFINA FERRAZ ELLERO GRISI<sup>2</sup>

<sup>1</sup>PhD in Pediatrics and Assistant Physician at Instituto da Criança, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo (HC-FMUSP), São Paulo, SP Brazil  
<sup>2</sup>Full Professor, Department of Pediatrics, FMUSP São Paulo, SP Brazil

## SUMMARY

**Introduction:** Hospitalizations for ambulatory care-sensitive conditions (HACSC) are considered an indicator of the effectiveness of primary health care (PHC). High rates of HACSC represent problems in the access or the quality of health care. In Brazil, HACSC rates are high and there are few studies on the factors associated with it.

**Objective:** To evaluate the access to PHC offered to children and adolescents hospitalized due to ACSC and analyze the conditioning factors.

**Method:** Cross-sectional study with a quantitative and qualitative approach. Five hundred and one (501) users (guardians/caregivers) and 42 professionals of PHC units were interviewed over one year. Quantitative data were obtained using Primary Care Assessment Tool validated in Brazil (PCATool-Brazil), while qualitative data were collected by semi-structured interview. The independent variables were: age, maternal education, family income, type of diagnosis, and model of care offered, and the dependent variables were access and its components (accessibility and use of services).

**Results:** Sixty-five percent (65.2%) of hospitalizations were ACSC. From the perspective of both users and professionals, access and its components presented low scores. Age, type of diagnosis, and model of care affected the results.

**Conclusion:** The proportion of HACSC was high in this population. Access to services is inappropriate due to: barriers to access, appreciation of the emergency services, and attitude towards health needs. Professional attitudes and opinions reinforce inadequate ideas of users reflecting on the pattern of service use.

**Keywords:** health services accessibility, primary health care, health evaluation, hospitalization, child health, health services.

Study conducted at Department of Pediatrics, Faculdade de Medicina, Universidade de São Paulo (FMUSP), São Paulo, SP Brazil

Article received: 6/29/2016  
 Accepted for publication: 7/26/2016

\*Correspondence:  
 Instituto da Criança  
 Address: Rua Dr. Enéas de  
 Carvalho Aguiar, 647  
 São Paulo, SP – Brazil  
 Postal code: 05403-000  
 ana.ferrer@hc.fm.usp.br

<http://dx.doi.org/10.1590/1806-9282.62.06.513>

## INTRODUCTION

In the late 1980s, a study that aimed to evaluate the impact of socioeconomic conditions on hospitalizations in New York found that timely and effective action taken by outpatient services would lessen the risk of hospitalization, which led to the emergence of the idea of “causes of hospitalization due to ambulatory care-sensitive conditions”.<sup>1</sup> The use of these hospitalizations, which are considered to be preventable, as an indicator of the performance of outpatient services began in the United States and was soon tested in other countries. After its use in Spain, a country with universal national health care system based on primary health care (PHC), ambulatory care-sensitive condi-

tions (ACSC) began to be used as an indicator of the effectiveness of this level of the system. In Brazil, the indicator is called “hospitalizations due to primary care-sensitive conditions” and in 2008 the Ministry of Health published an ordinance with the Brazilian list of these hospitalizations, which should be used as a tool for primary care evaluation and/or use in hospital care, and may be applied to evaluate the performance of the health system at the federal, state, and municipal levels.<sup>2</sup>

Regular monitoring performed by health services allows us to prevent the onset of diseases and avoid worsening of existing conditions, as well as to provide timely and effective care for acute conditions, reducing the risk

of hospitalization. Many studies relate a well-structured PHC system with lower rates of hospitalization. On the other hand, high rates of hospitalization for these causes could represent problems in access and/or the quality of the primary care offered.<sup>3-5</sup>

Publications about the hospitalizations for ambulatory care-sensitive conditions (HACSC) are still recent in Brazil, and most studies describe the trends (in number and/or causes) of these hospitalizations and are mostly based on secondary data from the Hospital Information System of the Brazilian unified health system (SUS). As such, most studies have described a tendency towards a decrease in the proportion of HACSC, mainly associated with the expansion of the Family Health Strategy (FHS).<sup>6-10</sup> However, these results are not unanimous, and in large urban centers, some authors have verified the opposite trend.<sup>7,11</sup> Despite describing a reduction of HACSC in the state, between 2000 and 2007 Rehem and Egry found that in greater São Paulo the trend was the opposite, with an increase of 17.65% of total hospitalizations.<sup>7</sup>

In the United Kingdom, despite the PHC system being well structured, it was noted that access barriers are associated with the high prevalence of demand for emergency services and unnecessary hospitalizations.<sup>12</sup> Studies about the factors that may be associated with avoidable hospitalizations are rarer in Brazil and are generally limited to describing the variables that were most linked to the risk of hospitalization for these conditions.<sup>13</sup> The studies seeking to understand access to and quality of the care provided to patients for these causes are rare, despite this type of evaluation being considered fundamental to define public health policies.

Considering the high rates of HACSC among the pediatric population and the low number of studies on the characteristics of the PHC provided to these patients, the aim of this study is to evaluate and analyze the different determining factors of access to PHC among children and adolescents hospitalized for preventable conditions.

## METHOD

This is a cross-sectional study with a quantitative and qualitative approach carried out with users and professionals at the basic health units (BHU) in the western side of the city of São Paulo. This research is included in a more comprehensive study on the quality of the PHC provided to children and adolescents living in this region.<sup>14</sup>

The study was developed in the Butantã/Jaguarié micro-region of the city of São Paulo, composed of six administrative districts serving 478,080 inhabitants, with 19.5% between 0 and 14 years of age and approximately

44.5% dependent on the SUS.<sup>15</sup> The care network is composed of fourteen BHU, including units that are part of the FHS program, units providing care under the traditional models, and some mixed units.

Given that the reference unit for pediatric hospitalizations in this region is the University Hospital of the University of São Paulo (HU-USP), the location for selecting users was the pediatric ward of this hospital. The sample was made up of children and adolescents from 0 to 14 years of age admitted to the pediatric ward from January 1 to December 31, 2011, who were users of one of the fourteen BHU in the region studied.

To obtain quantitative data, we sought a universal sample of children hospitalized for preventable conditions, according to the following criteria:

- Inclusion criteria: The child or adolescent was hospitalized in a pediatric ward of the HU-USP; the main diagnosis on admission was an HACSC based on the Brazilian list,<sup>2</sup> and health monitoring conducted at a BHU located in the west side of São Paulo.
- Exclusion criteria: The child or adolescent's guardian had already responded to the questionnaire in another hospitalization that occurred during the data collection period, the child or adolescent was not accompanied by their guardian at the time of the interview, the guardian was unable to inform the outpatient monitoring carried out by the child or adolescent, or the guardian of the child or adolescent did not agree to participate in the research.

In 2011, there were 2,031 hospitalizations in the pediatric ward of the HU-USP. Of these, 1,325 (65.2%) were caused by ACSC. One hundred eighty-eight (188) of these 1,325 cases (14.2%) were lost for being discharged before the interview. In accordance with the patient inclusion/exclusion criteria, the final sample for the quantitative data included 501 interviewed users. These interviews took place during the hospitalization period.

The collection of qualitative data was carried out in the last 3 months of the research, by the first author, and included patients who were admitted for HACSC, on randomly chosen days, whose guardians agreed to participate, and who met one of the two criteria: the child or adolescent had been included in the sample of quantitative data and his/her guardian answered that they did not contact the BHU when the child presented a new health problem, or the child or adolescent who had been excluded from the quantitative sample because they weren't being monitored at any BHU.

Twenty-five semi-structured questionnaires (Annex 1) were applied, with 18 patients being monitored at a BHU, but not seeking out this service in the presence of a new health problem, and seven patients not being monitored at a BHU. The interviews were recorded, after consent, using a digital recorder.

Three professionals at each BHU (the manager, one physician, and one nurse) also participated in the study as interviewees, after making themselves available to participate and agreeing to the informed consent form. These professionals were randomly chosen and interviewed at their place of work. Considering the 14 BHU in the area of coverage, 42 professionals responded to the interview.

The quantitative data was obtained through the Primary Care Assessment Tool (validated in Brazil – PCA-Tool-Brazil) using the child version and professional version.<sup>16</sup> In 2010, the Ministry of Health incorporated this tool as an assessment method, propagating it as part of its technical manuals, which contains the tool itself as well as the guidelines for its implementation and for the calculation of scores.<sup>17</sup> For the evaluation of access, which is the object of this research, the instrument applied to the users consisted of six questions to assess Accessibility (structure) and three to assess Use (process) (Annex 2). The questionnaire applied to the professionals consisted of nine questions related to Accessibility (Annex 3). The answers to each of the items are presented as a Likert-type scale: 4. Definitely yes; 3. Probably yes; 2. Probably not; 1. Definitely not; and 9. Don't know/don't remember. In addition to the PCATool-Brazil child version, the caregivers of the children or adolescents were asked questions to enable the characterization of the social and demographic conditions and, for each BHU manager, a questionnaire was applied for characterization of the unit.

The independent variables were: age of the child or adolescent calculated on the day of hospital admission, the mother's level of education, family income, and the nature of the diagnosis. The dependent variable was the First Contact Access, and its two components, use and accessibility.

The data was submitted to double entry, by different people, and validation, using the programs SPSS version 10.0 (SPSS Inc., Chicago, USA) and Excel 2000 software (Microsoft Corp. USA). For each completed questionnaire the score of First Contact Access and its components was calculated, according to the tool's Manual, with a strong orientation towards the principles of PHC considered for scores  $\geq 6.6$  and a weak orientation for scores  $< 6.6$ . For each of the dimensions analyzed, we compared the pro-

portion of level of orientation to the PHC (weak/strong) for each variable studied using Pearson's chi-square tests, adopting a significance level of  $p < 0.05$ .

The qualitative interviews were transcribed and categorized using N-Vivo 9 software and assessed using the content analysis technique according to thematic categories. The responses were used to supplement the discussion relating to the quantitative results.

The study was approved by the Research Ethics Committee of the University of São Paulo's University Hospital (n° 1039/10) and the Research Ethics Committee of Municipal Health Department of the city of São Paulo (n° 0095.0167000-11). All of the participants, users and professionals were given clear information about the study and only those who agreed and signed the respective Informed Consent Form were interviewed.

## RESULTS

In the period studied there were 2,031 hospitalizations, with 1,325 (65.2%) due to ACSC, and the vast majority for respiratory diseases (78%). Eighty-seven percent (87%) of the 501 interviews with users were answered by the mothers. Most of the children were male (57.7%) and the age ranged from 20 days old to 14 years, with a median of 15.6 months. A little over half were white (54.7%), 75% of the families received between 1 and 5 minimum wages, and 42% of mothers only studied up to middle school level. Hospitalization times varied from 1 to 42 days, with an average of 4.9 days. In relation to the type of HACSC, 409 (82%) of cases were classified as acute, 90 (18%) as chronic, and only two cases as immune-preventable diseases. Regarding the model of care received by patients, 39% of the sample was under the care of the FHS. Sixty-nine (13.7%) of the 501 cases were referred for hospitalization from a BHU, with the remainder (86.3%) originating from urgent and emergency services.

From the perspective of users, both the First Contact Access and its two components [Use (process) and Accessibility (structure)] presented weak orientation to the principles of PHC, with the respective scores being:  $4.97 \pm 1.87$ ,  $6.07 \pm 2.45$  and  $3.78 \pm 2.43$ . Table 1 presents the bivariate analysis between the level of orientation to PHC and the independent variables.

In relation to the questions regarding the use of the services, 91% of respondents replied that they take the child/adolescent to the PHC service when a routine check-up is necessary, but only 24% seek this service when there is a new health problem. As such, there was a significant difference ( $p = 0.001$ ) when comparing the model of care. Although only 33% of users of the FHS report seeking the

**TABLE 1** Bivariate analysis between the level of orientation to PHC and the characteristics of the patient and the model of care for the attribute First Contact Access and its components: Use and Accessibility.

|                                    | Access                     |                          |               | Utilization                |                          |        | Accessibility              |                          |                 |
|------------------------------------|----------------------------|--------------------------|---------------|----------------------------|--------------------------|--------|----------------------------|--------------------------|-----------------|
|                                    | Score obtained = 4.97±1.87 |                          |               | Score obtained = 6.07±2.45 |                          |        | Score obtained = 3.78±2.43 |                          |                 |
|                                    | Weak orientation n (%)     | Strong orientation n (%) | p*            | Weak orientation n (%)     | Strong orientation n (%) | p*     | Weak orientation n (%)     | Strong orientation n (%) | p*              |
| <b>Age</b>                         |                            |                          |               |                            |                          |        |                            |                          |                 |
| 0 to 11 m and 29d                  | 381 (79)                   | 103 (21)                 | 0.4123        | 190 (38)                   | 311 (62)                 | 0.1195 | 405 (84)                   | 79 (16)                  | <b>0.008057</b> |
| 1 year to 4y 11 m and 29d          | 157 (75)                   | 52 (25)                  |               | 89 (41)                    | 126 (59)                 |        | 163 (78)                   | 46 (22)                  |                 |
| 5 years to 9y 11 m and 29d         | 134 (82)                   | 30 (18)                  |               | 52 (31)                    | 117 (69)                 |        | 143 (87)                   | 21 (13)                  |                 |
| 10 to 14 years                     | 61 (81)                    | 14 (19)                  |               | 34 (44)                    | 44 (56)                  |        | 70 (93)                    | 5 (7)                    |                 |
|                                    | 29 (81)                    | 7 (19)                   |               | 15 (38)                    | 24 (62)                  |        | 29 (81)                    | 7 (19)                   |                 |
| <b>Mother's level of education</b> |                            |                          |               |                            |                          |        |                            |                          |                 |
| no formal education                | 379 (79)                   | 102 (21)                 | 0.4121        | 189 (38)                   | 309 (62)                 | 0.7925 | 403 (84)                   | 78 (16)                  | 0.7457          |
| incomplete middle school           | 5 (71)                     | 2 (29)                   |               | 4 (50)                     | 4 (50)                   |        | 6 (86)                     | 1 (14)                   |                 |
| complete middle school             | 118 (85)                   | 21 (15)                  |               | 58 (40)                    | 87 (60)                  |        | 119 (86)                   | 20 (14)                  |                 |
| incomplete high school             | 53 (79)                    | 14 (21)                  |               | 28 (42)                    | 39 (58)                  |        | 54 (81)                    | 13 (19)                  |                 |
| complete high school               | 60 (74)                    | 21 (26)                  |               | 31 (37)                    | 52 (63)                  |        | 64 (79)                    | 17 (21)                  |                 |
| higher education                   | 131 (77)                   | 40 (23)                  |               | 63 (36)                    | 114 (64)                 |        | 146 (85)                   | 25 (15)                  |                 |
|                                    | 12 (75)                    | 4 (25)                   |               | 5 (28)                     | 13 (72)                  |        | 14 (88)                    | 2 (13)                   |                 |
| <b>Family income</b>               |                            |                          |               |                            |                          |        |                            |                          |                 |
| Up to 1/2 MW                       | 356 (79)                   | 94 (21)                  | 0.7237        | 177 (38)                   | 288 (62)                 | 0.1301 | 382 (85)                   | 68 (15)                  | 0.0919          |
| 1/2 to less than 1 MW              | 9 (69)                     | 4 (31)                   |               | 2 (15)                     | 11 (85)                  |        | 8 (62)                     | 5 (38)                   |                 |
| 1 to less than 2 MW                | 46 (78)                    | 13 (22)                  |               | 24 (40)                    | 36 (60)                  |        | 51 (86)                    | 8 (14)                   |                 |
| 2 to less than 5 MW                | 151 (80)                   | 38 (20)                  |               | 74 (38)                    | 120 (62)                 |        | 159 (84)                   | 30 (16)                  |                 |
| more than 5 MW                     | 139 (79)                   | 38 (21)                  |               | 68 (37)                    | 116 (63)                 |        | 152 (86)                   | 25 (14)                  |                 |
|                                    | 11 (92)                    | 1 (8)                    |               | 9 (64)                     | 5 (36)                   |        | 12 (100)                   | 0 (0)                    |                 |
| <b>Nature of diagnosis</b>         |                            |                          |               |                            |                          |        |                            |                          |                 |
| acute                              | 381 (79)                   | 102 (21)                 | <b>0.0325</b> | 189 (38)                   | 310 (62)                 | 0.5345 | 405 (84)                   | 78 (16)                  | 0.8432          |
| chronic                            | 321 (81)                   | 76 (19)                  |               | 158 (39)                   | 251 (61)                 |        | 334 (84)                   | 63 (16)                  |                 |
|                                    | 60 (70)                    | 26 (30)                  |               | 31 (34)                    | 59 (66)                  |        | 71 (83)                    | 15 (17)                  |                 |
| <b>Model of care</b>               |                            |                          |               |                            |                          |        |                            |                          |                 |
| FHS                                | 381 (79)                   | 103 (21)                 | <b>0.0347</b> | 189 (38)                   | 311 (62)                 | 0.2601 | 405 (84)                   | 79 (16)                  | 0.3574          |
| Non-FHS                            | 139 (74)                   | 50 (26)                  |               | 68 (35)                    | 129 (65)                 |        | 154 (81)                   | 35 (19)                  |                 |
|                                    | 242 (82)                   | 53 (18)                  |               | 121 (40)                   | 182 (60)                 |        | 251 (85)                   | 44 (15)                  |                 |

MW: minimum wage; FHS: Family Health Strategy.  
\*Pearson's chi-squared test.

PHC in new health problems situations, this was significantly more frequent than non-FHS users of the BHU (17%) (Table 2).

First Contact Access score was higher in the evaluation of users of the BHU compared to the professionals (scores of  $4.97 \pm 1.87$  and  $2.99 \pm 1.08$ , respectively), with 100% of those interviewed considering the level of orientation to the principles of the PHC as low.

The responses to the semi-structured questionnaire are presented below in the discussion.

## DISCUSSION

In the period studied, 65.2% of the 2,031 hospitalizations that occurred in the pediatric ward were due to ambulatory care-sensitive conditions (ACSC). This proportion was higher in comparison with other studies, in which the rates of HACSC range from 35 to 60%.<sup>6,8,18-21</sup> This finding suggests that either access and/or the quality of care offered are inadequate, further reinforcing the importance of this study.

Both First Contact Access and its two components [structure (accessibility) and process (use of the service)] received a low evaluation among users. Among the variables studied, those that appeared to influence the evaluation were the type of diagnosis and the model of care received (Table 1). The assessment made by the professionals was even worse. The interpretation of these results is not simple, initially requiring weighing with relation to the concept of access and its components/determinants.

The concept is complex, and there is no consensus in the literature about its scope. In this study, we adopted Starfield's conception, in which First Contact Access means that the PHC service should be the first resource

contacted when a medical or health necessity arises, acting as the "gateway" into the system.<sup>22</sup> This concept assumes that primary care should be able to solve 85% of demands and, when necessary, be responsible for referring the patient to other levels of care (path A represented in the theoretical model) (Figure 1). Thus, PHC services need to be accessible, to act as a gateway and to be recognized as such, to solve the need, and to offer comprehensive care coordinated with the other levels of health care. The alternative paths mean that primary care had a low resolution capacity, failing to avoid hospitalization (B), or that the patient did not use primary care (C). Low resolution capacity can be related both to inadequate clinical management as well as late intervention, either because the service was not sufficiently accessible or because of delayed contact by the user. Failure to use the service can also derive not only from accessibility problems but also from factors related to the patient, such as sociodemographic and cultural characteristics, attitudes in relation to the illness, and the way the different services are recognized, among others.<sup>4</sup> Therefore, assessing whether a service works properly as a point of first contact involves evaluation of both accessibility (structural element) and use (procedural element). Accessibility is what facilitates or prevents people from receiving care and, therefore, it includes both a geographic component as well as a socio-organizational component. The use of the service, in turn, depends on the active attitude of the user, but is strongly influenced by the characteristics of the services. Therefore, it should be noted that the First Contact Access attribute is conditional upon a complex relationship between the characteristics of the patient and society, such

**TABLE 2** Responses to each question of the Use component according to the model of care.

|  | No<br>n (%) | Yes<br>n (%) | Total<br>n (%) | p-value*      |
|--|-------------|--------------|----------------|---------------|
| Question 1 – When your child requires a checkup/routine consultation, do you seek the PHC service before going to another service?         |             |              |                |               |
| FHS  | 14 (7)      | 183 (93)     | 197 (39)       | 0.3068        |
| Non-FHS  | 31 (10)     | 273 (90)     | 304 (61)       |               |
| Total  | 45 (9)      | 456 (91)     | 501 (100)      |               |
| Question 2 – When your child has a new health problem, do you seek the PHC service before going to another service?                        |             |              |                |               |
| FHS  | 132 (67)    | 65 (33)      | 197 (39)       | <b>0.0001</b> |
| Non-FHS  | 251 (83)    | 53 (17)      | 304 (61)       |               |
| Total  | 383 (76)    | 118 (24)     | 501 (100)      |               |
| Question 3 – When your child has to consult a specialist, does the physician or nurse of the PHC service have the obligation to refer you? |             |              |                |               |
| FHS  | 68 (35)     | 129 (65)     | 197 (39)       | 0.7802        |
| Non-FHS  | 100 (33)    | 204 (67)     | 304 (61)       |               |
| Total  | 168 (34)    | 333 (66)     | 501 (100)      |               |

\*Pearson's chi-square test.

as income, level of education and health needs, the organizational characteristics of the health services, such as the availability of service, and the characteristics and history of public policies.

The evaluation of accessibility was worse than that of use of the service, with scores reaching 3.78 and 6.07, respectively. This finding was similar to that of other studies,<sup>23-26</sup> demonstrating that the availability of services does not meet the expectations of the population.

The qualitative interviews enabled us to identify the presence of problems related to the organization of the services as one of the reasons justifying such a low evaluation. Four of the seven that “did not attend the BHU” cited reasons considered as barriers to access:

“Look, the truth is that I went once and he used to study in the morning and they only had a physician, a pediatrician, in the morning. So it wasn’t possible. Because if I miss school, you know, right? Because there at the health center, I go and they only have a pediatrician in the morning.” (patient: E.D.S.)

“Also, it’s so difficult to get an appointment that if the child is well and does not bother you, you just don’t go.” (patient: M.F.S.)

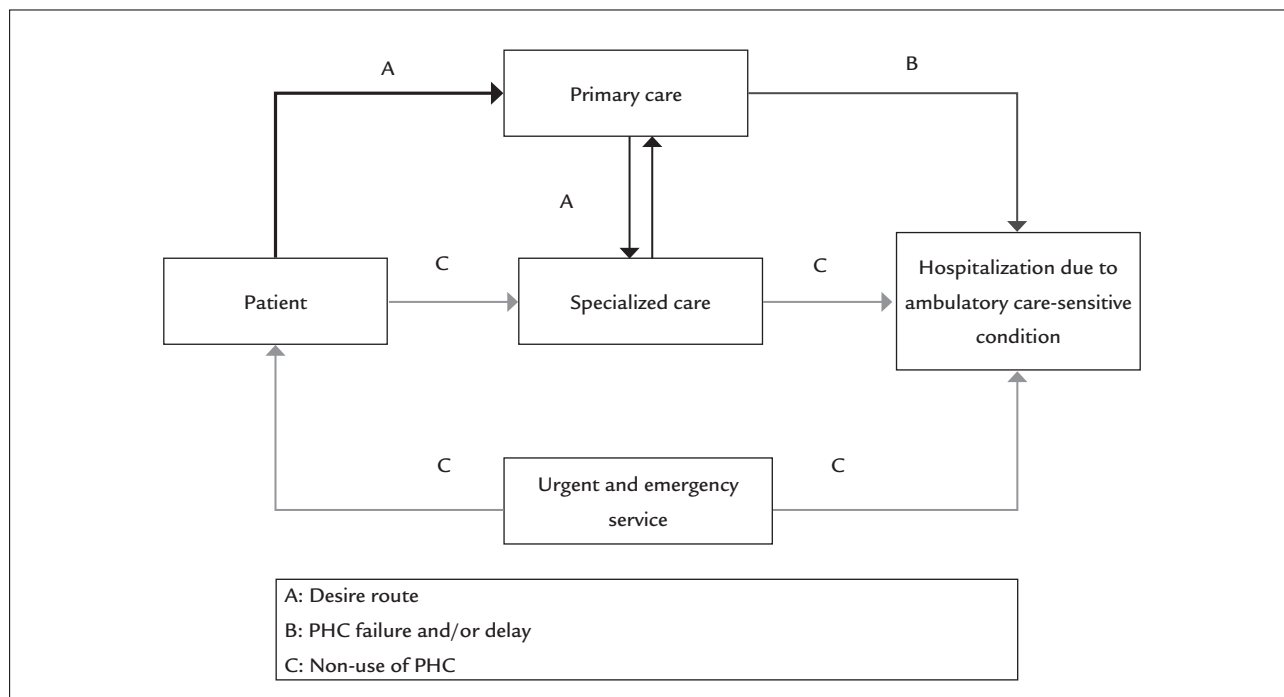
“Because the health center nearest to home takes too long. Sometimes it takes months for you to make an appointment. And even for an appointment the queue is usually long, miles long. You have to get up early to get in the queue.” (patient: N.A.S.B.)

“They’re not giving priority, there are no openings. The pediatricians there see patients aged up to 19 years.” (patient: T.C.M.)

Among those who seek the services but did not attend the BHU when a new health problem arose, several claimed that it was difficult or even impossible to get an appointment without booking in advance, although all of the managers responded that at their units there is a possibility of fitting in an appointment for acute complaints. Some statements exemplify this information:

“It’s very difficult. Only if someone gives up, only if someone doesn’t come to their appointment, or if we wait until everyone is seen.” (patient: G.C.N.)

“Yes, and I come to the ER at the HU. I tried to be squeeze in at the health center but I couldn’t.” (patient: L.C.S.)



**FIGURE 1** Schematic representation of the route traveled by the patient and the outcome of hospitalization due to ambulatory care-sensitive condition.

Source: adapted from Caminal and Casanova, 2003.<sup>4</sup>

“No. Even an appointment for a routine checkup is difficult.” (patient: L.S.M.) – answer to the question of whether an appointment could be made on the same day.

“Because the service is so slow, and if you don’t have an appointment booked they won’t see you.” (patient: M.P.S.)

“Because they say they can only let you be seen if you have an appointment. I ask for them to squeeze me in and they say they can’t, and that you have to go to the nearest emergency room.” (patient: R.V.S.)

“Because of the bureaucracy to make an appointment. If you go there in person they tell you it’s by phone, and say that there are no openings. I explain that I need an appointment, but I can never get one.” (patient: V.T.M.)

“Because they don’t work like that, only in the emergency room. You have to make an appointment; they only see you after 1 or 2 months.” (patient: W.R.M.M.)

Note that one of the main reasons for customer dissatisfaction refers to being “squeezed in” or “unscheduled” appointments for the resolution of acute complaints, which may explain the significant association between low scores in First Contact Access and the nature of the diagnosis (Table 1) – patients hospitalized with acute conditions rated it worse than those hospitalized due to decompensation of chronic diseases. This data is similar to that described by other authors who report the presence of access barriers as the primary reason for seeking care at emergency rooms.<sup>27,28</sup>

However, the solution to access problems cannot be resolved simply through organizational changes. In 2002, in the UK, a waiting period of 24 hours was established so that the user could be seen by a health professional. However, an undesirable impact was noted: a reduction in scheduled appointments and impairment of long-term medical monitoring,<sup>29</sup> as well as a high and often unnecessary demand for emergency room services and hospitalizations.<sup>12</sup> In the present study, it was found that other aspects, besides the organization of services, have an impact on access and use of the services. The way of thinking and acting when faced with health needs may have contributed to the low scores found. Some interviewees explained the search for emergency services instead of the basic network services in the presence of acute complaints as “personal preferences”, justifying this choice because they considered those sites to have a greater capacity for resolution:

“I bring her straight here, because over there they don’t resolve anything.” (patient: M.F.M.S.)

“Because there are more resources here.” (patient: Y.J.S.O.)

“Because it’s better here. Because there it’s only for appointments. Because there are more resources here.” (patient: Y.L.F.)

Kovacs et al.<sup>27</sup> analyzed the trajectory traveled by children served at an emergency room (ER), and its relationship to the basic health units, noting that 61.5% of patients had not sought the basic network and that only 15.2% of the reasons for going to the ER required this kind of service. The reasons found by these and other authors<sup>30</sup> were similar to those verified in this study: difficulties getting an appointment at PHC and, mainly, valuing the technological density found at emergency services. In the present study, the answers to the semi-structured questions exemplify the collective mindset that values the technological density, built on the relationship of the population with the health system. It is worth noting the role that the actual basic network professionals seem to exert on the depth of this conception:

“Because they say we should have gone to the ER, that the pediatrician won’t be able to resolve it, and that you have to go straight to the emergency room.” (patient: C.E.M.S.L.)

Farias et al.<sup>31</sup> interviewed FHS professionals to analyze the reception and resolution of emergencies at primary care services and concluded that these professionals have difficulty identifying situations and do not consider that PHC is appropriate for this type of care. Certain problems in the training of these professionals have been described as a factor that hinders the (actual) reorientation of the health care model.<sup>32,33</sup>

Other factors may be correlated to technological performance and distortion of the concept of complexity: the hierarchical design of the SUS, as described by Mendes;<sup>34</sup> the adoption of the term “basic care”, which brings with it the notion of “elementary” or “less complex”, as well as the historical process of construction of PHC in Brazil may be at the root of the concept that the basic unit is the place to “get vaccines” and have “routine checkups”. The validation of this concept can be seen when analyzing the pattern of use (Table 2): 91% of the guardians, without any difference between the models of care, answered “yes” or “probably yes” when asked if they do take the child for routine checkups at the BHU, but

only 24% had the same response to the question about taking the child to the BHU before going to another service when a new “health problem” arises. This notion on the part of users may also translate the statistically significant correlation found between the assessment of accessibility and the age of the child – the higher the age, the worse the evaluation (Table 1). Historically, public policies on child health have always prioritized children in the early years of life through specific programs. If, on the one hand, policies are made for the organization of the services, on the other, there are other concepts “learned” by the population over time. Guardians consider that older children need less care, in spite of having a chronic disease. The following statements exemplify this finding:

“Look, unfortunately, we didn’t think it was necessary. So, that’s why she’s not being monitored.” (patient: D.M.S.D. – hospitalized due to an asthma attack)

“Well, in fact, when the child is younger, there are those routine follow-ups. This starts getting further apart – further apart until you don’t go anymore.” (patient M.F.S. – hospitalized due to an asthma attack)

The other variable that showed a correlation with the evaluation of First Contact Access, from the perspective of the users, was the BHU’s model of care. Although both the patients under the non-FHS model and the FHS model evaluated this attribute poorly, the score was significantly better in the latter (Table 1). The comparison between the FHS and the traditional model of the BHU in terms of access has already been described by other authors, with most finding little difference between the two models,<sup>25,35,36</sup> while others describe problems relating to the organization of the services and conclude that the FHS has not worked as a good gateway.<sup>26,37</sup> In the present study, 74% of users of the FHS gave a score of less than 6.6 to First Contact Access, but this assessment was significantly better than that made by patients in the traditional model (Table 1). The better performance of the FHS may possibly be related to the greater connection provided by this model, as the sensation of “greater belonging” to the service favors its use and has an impact on the expectations of user in relation to the satisfaction of their needs.<sup>27</sup> The better evaluation of access between users of the FHS must have favored the statistically significant difference found for the use of the service, when the child has a new health problem, between the two models of care (Table 2).

In our study, the professionals evaluated First Contact Access poorly, similar to that described by other evalua-

tors.<sup>23,24</sup> This low score given by the professionals represents the barriers imposed by the organization of the services and is reflected in the pattern of use of the network by users, given that it encourages the notion of difficulty and uncertainty of access among them.

The present study only evaluated patients hospitalized due to ACSC and the proportions found for these hospitalizations do not represent the risk of hospitalization due to these conditions in the region studied or establish inferences as to whether the variables studied related to a higher or lower risk of hospitalization due to these causes. Likewise, the design of our study does not allow us to establish a causal relationship but only an association between the variables and the scores obtained for First Contact Access and its components.

## CONCLUSION

The proportion of HACSC was high in the population studied, reinforcing the importance of research on the quality of care provided and access to PHC services. The present study reiterates the importance of evaluations from the perspective of the various players involved and under the approach of different and complementary methods, enabling the understanding of the various factors involved in the quality of care and of the complex relationship established between them.

Access and its components (accessibility and use of services) were poorly evaluated, identifying the following as probable determining factors: the presence of barriers to access, especially for unscheduled appointments, the validation of emergency services, and those with higher technological density before the population, and entrenched culture that older children and teenagers do not require routine medical monitoring. The negative assessment made by the professionals themselves in relation to access probably reinforces these concepts regarding access among the population, with possible reflections on the pattern of use of the services.

These results indicate that to improve access merely by promoting improvements in the organization of the services is not sufficient. It is necessary to seek strategies that enable a change of culture on the use of health services in the medium and long term. Investment in the qualification and training of professionals involved in PHC is also critical for the reorganization and enhancement of PHC.

## FUNDING

The project was submitted to Public Notice 014/2010 issued by the CNPq (Conselho Nacional de Desenvolvi-



mento Científico e Tecnológico) and approved under number 480932/2010-7, thus receiving funding for the costs foreseen in the budget.

## RESUMO

Avaliação do acesso à atenção primária à saúde entre crianças e adolescentes internados por condições evitáveis

**Introdução:** internações por condições sensíveis à atenção primária (ICSAP) é um indicador da efetividade da atenção primária à saúde (APS). Altas taxas de ICSAP representam problemas no acesso e/ou na qualidade da APS oferecida. Verificam-se altas taxas dessas hospitalizações e poucos estudos sobre os fatores associados às ICSAP em nosso meio.

**Objetivo:** avaliar o acesso à APS entre crianças e adolescentes com ICSAP e analisar os fatores condicionantes.

**Método:** estudo de corte transversal quanti-qualitativo. Foram entrevistados 501 responsáveis por crianças internadas por ICSAP no período de um ano, usuárias de unidades básicas de saúde no município de São Paulo, e 42 profissionais. Os dados quantitativos foram obtidos com o Instrumento de Avaliação da Atenção Primária à Saúde (PCATool-Brasil), e os dados qualitativos, por entrevista semiestruturada. Variáveis independentes: idade, escolaridade materna, renda familiar, tipo de diagnóstico e modelo de atenção; variáveis dependentes: o acesso e seus componentes (acessibilidade e utilização de serviços).

**Resultados:** sessenta e cinco por cento (65,2%) das hospitalizações foram ICSAP. Tanto os usuários como os profissionais atribuíram baixos escores para o acesso e seus componentes. A idade, o tipo de diagnóstico e o modelo de atenção influenciaram a avaliação dos usuários.

**Conclusão:** a proporção de ICSAP foi alta na população estudada. O acesso aos serviços de APS está inadequado e está relacionado a: presença de barreiras de acesso, valorização dos serviços de urgência e atitude frente às necessidades de saúde. A postura e as opiniões dos profissionais reforçam os conceitos inadequados dos usuários, refletindo no padrão de utilização dos serviços.

**Palavras-chave:** acesso aos serviços de saúde, atenção primária à saúde, avaliação em saúde, hospitalização, saúde da criança, serviços de saúde.

## REFERENCES

1. Billings J, Zeitel L, Lukomnik J, Carey TS, Blank AE, Newman L. Impact of socioeconomic status on hospital use in New York City. *Health Aff (Millwood)*. 1993; 12(1):162-73.

2. Brasil. Ministério da Saúde. Portaria n. 221, 17 de abril 2008. Publica em forma do anexo a Lista Brasileira de Internações por Condições Sensíveis à Atenção Primária. Diário Oficial da União [online]. Brasília (DF). 2008. Available from: <http://dtr2001.saude.gov.br/sas/PORTARIAS/Port2008/PT-221.htm>.
3. Casanova C, Starfield B. Hospitalizations of children and access to primary care: a cross-national comparison. *Int J Health Serv*. 1995; 25(2):283-94.
4. Caminal JCH, Casanova C. La evaluación de la atención primaria y las hospitalizaciones por ACSC. Marco conceptual. *Aten Primaria*. 2003; 31(1):61-5.
5. Caminal J, Starfield B, Sánchez E, Casanova C, Morales M. The role of primary care in preventing ambulatory care sensitive conditions. *Eur J Public Health*. 2004; 14(3):246-51.
6. Moura BLA, Cunha RC, Aquino R, Medina MG, Mota ELA, Macinko J, et al. Principais causas de internação por condições sensíveis à atenção primária no Brasil: uma análise por faixa etária e região. *Rev Bras Saude Matern Infant*. 2010; 10(Suppl 1):583-91.
7. Rehem TCMSB, Egry EY. Internações por condições sensíveis à atenção primária no Estado de São Paulo. *Cien Saude Colet*. 2011; 16(12):4755-66.
8. Barreto JO, Nery IS, Costa MOS. Estratégia Saúde da Família e internações hospitalares em menores de 5 anos no Piauí, Brasil. *Cad Saude Publica*. 2012; 28(3):515-26.
9. Boing AF, Vicenzi RB, Magajewski F, Boing AC, Moretti-Pires RO, Peres KG, et al. Redução das Internações por Condições Sensíveis à Atenção Primária no Brasil entre 1998-2009. *Rev Saude Publica*. 2012; 46(2):359-66.
10. Brasil VP, Costa JSD. Hospitalizações por condições sensíveis à atenção primária em Florianópolis, Santa Catarina – estudo ecológico de 2001 a 2011. *Epidemiol Serv Saude*. 2016; 25(1):75-84.
11. Costa JSD, Patrussi MP, Morimoto T, Arruda JS, Bratkowski GR, Sopelsa M, et al. Tendência das internações por condições sensíveis à atenção primária e fatores associados em Porto Alegre, RS, Brasil. *Ciênc Saude Coletiva*. 2016; 21(4):1289-96.
12. Cecil E, Bottle A, Cowling TE, Majeed A, Wolfe I, Saxena S. Primary care access, emergency department visits, and unplanned short hospitalizations in the UK. *Pediatrics*. 2016; 137(2):e20151492.
13. Nedel FB, Facchini LA, Martín M, Navarro A. Características da atenção básica associadas ao risco de internar por condições sensíveis à atenção primária: revisão sistemática da literatura. *Epidemiol Serv Saude*. 2010; 19(1):61-75.
14. Ferrer APS. Avaliação da atenção primária à saúde prestada a crianças e adolescentes na região oeste do município de São Paulo. 2013 [thesis]. São Paulo: Faculdade de Medicina da Universidade de São Paulo; 2013. Available from: <http://www.teses.usp.br/teses/disponiveis/5/5141/tde-26022014-085334>.
15. CEINfo – Coordenação de epidemiologia de informação da Prefeitura Municipal de São Paulo – Indicadores para diagnóstico sintético de saúde. Cidade de São Paulo 2004 – 2011. Ano 8(5); 3 abril de 2013.
16. Harzheim E, Starfield B, Rajmil L, Álvarez-Dardet C, Stein AT. Consistência interna e confiabilidade da versão em português do Instrumento de Avaliação da Atenção Primária (PCATool-Brasil) para serviços de saúde infantil. *Cad Saude Publica*. 2006; 22(8):1649-59.
17. Brasil. Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Manual do instrumento de avaliação da atenção primária à saúde: primary care assessment tool. Brasília (DF): Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Atenção Básica; 2010. Available from: [http://189.28.128.100/dab/docs/publicacoes/geral/manual\\_instrumento\\_avaliacao.pdf](http://189.28.128.100/dab/docs/publicacoes/geral/manual_instrumento_avaliacao.pdf).
18. Nedel FB, Facchini LA, Martín-Mateo M, Vieira LAS, Thumé E. Programa Saúde da Família e condições sensíveis à atenção primária, Bagé (RS). *Rev Saude Publica*. 2008; 42(6):1041-52.
19. Lenz MLM, Flores R, Pires NV, Stein AT. Hospitalizações entre crianças e adolescentes no território de abrangência de um serviço de Atenção Primária à Saúde. *Rev Bras Med Fam Com*. 2008; 3(12):271-81.
20. Caldeira AP, Fernandes VBL, Fonseca WP, Faria AA. Internações pediátricas por condições sensíveis à atenção primária em Montes Claros, Minas Gerais, Brasil. *Rev Bras Saude Matern Infant*. 2011; 11(1):61-71.
21. Carvalho SC, Mota E, Dourado I, Aquino R, Teles C, Medina MG. Hospitalizations of children due to primary health care sensitive conditions in Pernambuco State, Northeast Brazil. *Cad Saude Publica*. 2015; 31(4):744-54.
22. Starfield B. Atenção Primária: equilíbrio entre necessidades de saúde, serviços e tecnologia. Brasília: UNESCO / Ministério da Saúde; 2002. 726p.

23. Elias PE, Ferreira CW, Alves MCG, Cohn A, Kishima V, Escrivão Jr A, et al. Atenção Básica em Saúde: comparação entre PSF e UBS por estrato de exclusão social no município de São Paulo. *Ciênc Saude Colet*. 2006; 11(3):633-41.
24. Ibañez N, Rocha JSY, Castro PC, Ribeiro MCSA, Forster AC, Novaes HMD, wt al. Avaliação do desempenho da atenção básica no Estado de São Paulo. *Ciênc Saude Colet*. 2006; 11(3):683-703.
25. Oliveira VBCA, Veríssimo MLOR. Assistência à saúde da criança segundo suas famílias: comparação entre modelos de Atenção Primária. *Rev Esc Enferm USP*. 2015; 49(1):30-6.
26. Silva SA, Fracolli LA. Avaliação da assistência à criança na Estratégia de Saúde da Família. *Rev Bras Enferm*. 2016; 69(1):54-61.
27. Kovacs MH, Feliciano KVO, Sarinho SW, Veras AACA. Acessibilidade às ações básicas entre crianças atendidas em serviços de pronto-socorro. *J Pediatr (Rio J)*. 2005; 81(3):251-8.
28. Puccini PT, Cornetta VK. Ocorrências em pronto-socorro: eventos-sentinela para o monitoramento da atenção básica em saúde. *Cad Saude Publica*. 2008; 24(9):2032-42.
29. Kontopantelis E, Roland M, Reeves D. Patient experience of Access to primary care: identification of predictors in a national patient survey. *BMC Fam Pract*. 2010; 11:61.
30. Buboltz FL, Silveira A, Neves ET. Estratégias de famílias de crianças atendidas em pronto-socorro pediátrico: a busca pela construção da integralidade. *Texto Contexto Enferm Florianópolis*. 2015; 24(4):1027-34.
31. Farias DC, Celino SDM, Peixoto JBS, Barbosa ML, Costa MC. Acolhimento e resolubilidade das urgências na estratégia Saúde da Família. *Revista Brasileira de Educação Médica* 2015; 39(1):79-87.
32. Motta LCS, Siqueira-Batista R. Estratégia Saúde da Família: clínica e crítica. *Rev Bras Educ Med*. 2015; 39(2):196-207.
33. Arantes LJ, Shimizu HE, Merchán-Hamann E. Contribuições e desafios da Estratégia Saúde da Família na Atenção Primária à Saúde no Brasil: revisão de literatura. *Ciênc Saúde Coletiva*. 2016; 21(5):1499-510.
34. Mendes EV. O SUS que temos e o SUS que queremos: uma agenda. *Revista Mineira de Saúde Pública [online]*. 2004; 4(ano 3):4-26. Available from: <http://www.esp.mg.gov.br/wp-content/uploads/2009/07/revista04.pdf>.
35. Harzheim E. Evaluación de la salud infantil del Programa Saúde da Família em la región sur de Porto Alegre, Brasil [thesis]. Alicante: Departamento de Salud Pública, Universidad de Alicante; 2004. Available from: <http://bvsm.ssaude.gov.br/bvs/ct/pdf/erno2005.pdf>.
36. Macinko J, Almeida C, Oliveira ES, Sá PK. Organization and delivery of primary health care services in Petrópolis, Brazil. *Int J Health Plann.Manage*. 2004; 19(4):303-17.
37. Azevedo ALM, Costa AM. A estreita porta de entrada do Sistema Único de Saúde (SUS): uma avaliação do acesso na Estratégia de Saúde da Família. *Interface (Botucatu)*. 2010; 14(35):797-810.

**ANNEX 1** Semi-structured questionnaire for obtaining qualitative data.

**To the guardians that responded that they did not seek the BHU when the child/adolescent presented a new health problem (question 2 of the Use component), at the end of the application of the PCATool we asked:**

1. Why didn't you seek the BHU?
2. If you want an appointment at the BHU when your child gets sick, are they able to "squeeze you in"?
3. To which service do you usually take the child/adolescent when they get sick?
4. Does the child/adolescent usually get sick very often?

**For those guardians of children/adolescents who were not monitored at the BHU (identified during the selection of patients) we asked:**

1. What is the reason for the child/adolescent not to be monitored at the BHU?
2. Is the child/adolescent monitored by an outpatient service? What is this service?
3. To which health care service is the child/adolescent taken when they present a health problem?
4. Does the child/adolescent have a chronic health problem?

**ANNEX 2** Questionnaire applied to users to evaluate access (PCATool-Brazil child version).**First Contact Access – Use**

1. When your child needs a checkup ("routine consultation"), do you seek the basic health unit (BHU) before going to another health service?
2. When your child has a new health problem, do you seek the BHU before going to another health service?
3. When your child has to consult a specialist, does the physician or nurse of the BHU have the obligation to refer you?

**First Contact Access – Accessibility**

1. When the BHU is open and your child gets sick, does someone from this health service attend to you on the same day?
2. Do you have to wait a long time or talk to many people to book an appointment at the BHU?
3. Is it easy to book an appointment for a checkup of the child (routine consultation) at the BHU?
4. When you arrive at the BHU, do you have to wait more than 30 minutes for your child to see the physician or nurse (not including screening or reception)?
5. Is it hard for you to get medical care for your child at the BHU when you think it is necessary?
6. When the BHU is open, can you get advice quickly over the phone if needed?

**ANNEX 3** Questionnaire applied to professionals of the BHU for evaluation of access (PCATool-Brazil professional version).**First Contact Access – Accessibility**

1. Is your health care service open Saturday or Sunday?
2. Is your health care service open until 8 pm at least some days of the week?
3. When your health care service is open and there is a sick patient, does someone from your service attend to them on the same day?
4. When your health care service is open, can patients quickly obtain advice over the phone when judged necessary?
5. When your health care service is closed, is there a phone number to which patients can call when they get sick?
6. When your health care service is closed on Saturdays and Sundays and a patient gets sick, does someone from your service attend to them on the same day?
7. When your health care service is closed at night and a patient gets sick, does someone from your service attend to them that night?
8. Is it easy for a patient to make an appointment for a checkup (routine consultation) at your health care service?
9. On average, do patients have to wait more than 30 minutes to be seen by the doctor or nurse (not including screening or reception)?