

Disability prevention, detection and assistance in primary health care services in the state of São Paulo, Brazil

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Abstract *The objective of this study was to assess the performance of primary health care (PHC) services for disability prevention, detection and assistance in the state of São Paulo. The study included 2739 health services, from 514 municipalities. 128 organizational quality indicators of the QualiAB instrument referring to the evaluative dimension “Attention to disability in primary health care services”. The association of health care performance score of each domain with independent variables, health assessment, and support network were tested using of multiple linear regression. The performance percentage was 61.6% for all domains, 73.6% for structure (inputs and human resources), 68.7% for qualification of pre-natal care, 56.1% for qualification of child health care, 55.8% for prevention of disabilities related to chronic conditions, and 53.9% for attention to people with disabilities and caregivers. There was a significant association with variables related to the type of service and participation in service evaluations. PHC services still perform incipient actions for the prevention, surveillance and diagnosis of disabilities as well as for comprehensive care for people with disabilities.*

Key words *Health assessment, Primary health care, Health services, People with disabilities*

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Introduction

The care offered to people with disabilities (PwD) requires an integration of cross-sectoral health care policies with community actions^{1,2}. The health system should provide protection, prevention and control of diseases and health problems, and promote health³.

Disability reduces the social integration, requiring adaptations to perform a function or activity⁴. Physical, mental and sensory impairments negatively affect individual neuropsychomotor development (NPMD). However, 70 to 80% of disability conditions can be avoided or minimized⁵.

In Brazil, the care network for people with disabilities (RCPwD) was established by ordinance n° 793 of April 24, 2012, and designates primary health care (PHC) services as the main organizing tool of the care network, leading actions for the prevention, promotion and early identification of disabilities in the pre, peri- and post-natal stages, childhood, adolescence and adult life; providing comprehensive care for PwD; and ensuring access to secondary and tertiary level of services to uphold autonomy⁵⁻⁸.

Under this scope, this study aimed to investigate how different conditions recognized as disability are being addressed by PHC services. The following question directed the research: Does the organization of structures and processes recognize health care specificities for the prevention and diagnosis strategies required for comprehensive care, within the limits of PHC services and from this level of care to networking.

There are no evaluation tools for specific PHC services able to cover disability prevention, detection, and assistance actions in PHC services. The relevant published literature present case studies on practices performed in local or regional services⁸. However, regarding PHC evaluations, there are applied and validated instruments that facilitate advancements in area of research on health assessment.

Given the above, it is worth assessing whether the political guidelines defined for attention to disability in PHC services have been effectively translated into actions on the part of the evaluated services. Thus, this study aimed to evaluate the performance of PHC services in the state of São Paulo regarding disability prevention, detection, and assistance.

Methods

This was a cross-sectional study using data collection was realized in 2017 and 2018, in the State of São Paulo, with support from the São Paulo State Department of Health. This study was approved by the Research Ethics Committee of the Botucatu School of Medicine of Julio de Mesquita Filho State University of São Paulo under protocol number 2,425,176 on December 8, 2017.

An evaluation matrix was constructed using the QualiAB questionnaire⁹ based on the formulation of an evaluation model described by Zarili¹⁰ using indicators of organizational quality of PHC services.

The QualiAB⁹ instrument is available online at <https://abasicsa.fmb.unesp.br/> and in the notebook of good practices⁹, which explains the criteria, interpretations and indicators used. Managers of the primary health care services responded voluntarily. Queries were focused on the organization of the PHC work process, including queries related to municipal and local management and different components of health care in PHC services⁹.

A total of 128 QualiAB variables, categorized as indicators of the evaluative dimension *Attention to Disability in Primary Health Care Services*, were distributed into five domains for analysis: 1) Structure; 2) Prenatal Care; 3) Child Health Care; 4) Prevention of Disability in Diseases and Chronic Diseases; and 5) Attention to People with Disabilities and Caregivers.

The indicators of work organization investigate early diagnosis and prevention disability within the domains “Antenatal care”, “Child health care” and “Prevention of disability in diseases and chronic diseases” are presented in Chart 1.

The domain “Antenatal Care” refers to the strategic actions to prevent disability in the fetus during pregnancy and in the newborn (NB) during labor and in the puerperium. The domain “Child Health Care” consists of several actions and procedures for early childhood care and childcare, providing early disability diagnose. The domain “Prevention of Disability in Diseases and Chronic Diseases” corresponds to the prevention of disability as a condition generated by a health problem, providing opportunities of treatment, as in cases of noncommunicable diseases, work accidents, dementia, accidents, trauma and other complaints requiring compulsory notification.

Chart 1. QualiAB indicators focusing on disability prevention and early diagnosis by domain in the dimension *Disability Care in Primary Health Care Services*.

| Indicators By Domain |
|--|
| Prenatal care |
| <ol style="list-style-type: none"> 1. Early identification of prenatal care 2. Average proportion of pregnant women who start prenatal care in the first trimester 3. Prenatal record in medical records, pregnant woman card and perinatal records 4. Frequency of consultations during prenatal care and in the last month of pregnancy 5. Identification of high-risk pregnant women 6. Referral of high-risk pregnant women to a reference service and maintenance of follow-up at the basic health unit 7. Differentiated care for pregnant women aged 10 to 19 years 8. Laboratory tests requested in the first trimester of pregnancy to identify complications that may cause prematurity, developmental changes or fetal death 9. Laboratory tests requested in the second and/or third trimester of pregnancy to identify complications that may cause prematurity, developmental changes or fetal death 10. Electrocardiogram at the unit 11. Application of the Tdap vaccine (diphtheria, tetanus and acellular pertussis) 12. Application of benzathine penicillin (Benzetacil) in the unit 13. Prevention of the vertical transmission of syphilis 14. Prevention of mother-to-child HIV transmission 15. Syphilis treatment for the pregnant woman and her partner with benzathine penicillin at the basic health unit 16. Guidance for the partner(s) attend evaluations and counseling in cases suggestive of sexually transmitted diseases 17. Prevention of anemia and changes in nutritional status during pregnancy 18. Indication for the use of medications with lesser effects on the fetus during pregnancy 19. Assessment of the risks of smoking and the use of alcoholic beverages and other drugs during pregnancy 20. Evaluation of pregnant women's working conditions 21. Evaluation of childbirth complications in immediate postpartum care 22. Guidelines on breastfeeding and iron supplementation in immediate postpartum care 23. Guidelines for pregnant women on breastfeeding and support for women who will not be able to breastfeed 24. Training and/or continuing education for professionals from the basic health unit on women's health carried out in the last year |

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Indicators of work organization focused on comprehensive care for PwD compose the domains "Structure" and "Attention to People with Disabilities and Caregivers" and are presented in Chart 2.

The "Structure" domain refers to the structural conditions, inputs and human resources to guarantee access and accessibility to PHC services, the availability of spaces for collective activities, oral health care, and equipment for emergency care and emergency services, access to ambulances, vehicles and information systems, and the formation of a basic and oral health team. Finally, the domain "Attention to People with Disabilities and Caregivers" refers to tertiary prevention actions and comprehensive health care for PwD.

Statistical analysis was performed using IBM SPSS v.20.0. The indicators were measured using

a binary system, where "1" corresponded to the affirmative answer for the recommended action. For each indicator, there was a sum for services with positive responses. The frequencies of positive responses to the indicators in each domain were summed, and the value was divided by the total number of indicators in the domain, yielding a percentage. The same procedure was performed for each domain to obtain a score for each dimension.

Next, the association between the five domains and the dimension, with responses related to the characteristics of the service, health planning and evaluation and the support network, were tested. Multiple linear regression models were fitted (5% significance level). A description of the independent variables is presented in Chart 3.

Chart 1. QualiAB indicators focusing on disability prevention and early diagnosis by domain in the dimension *Disability Care in Primary Health Care Services.*

| Child health care |
|---|
| 1. Newborn birth conditions and guidelines on basic care in the immediate postpartum period |
| 2. Guidelines for the care of the newborn (vaccination, exams, others) in the immediate postpartum period |
| 3. Scheduling of the newborn's first visit at the unit |
| 4. Guidance on foot, ear and eye tests for the newborn |
| 5. Application of the BCG vaccine |
| 6. Application of the polio vaccine/oral polio vaccine/OPV and inactivated polio vaccine/inactivated polio vaccine/VIP |
| 7. Application of the pentavalent vaccine (DTP + Hib + HB) |
| 8. Application of the DTP (triple bacterial) vaccine |
| 9. Application of the MMR vaccine (measles, mumps and rubella - MRS) |
| 10. Application of the tetra viral vaccine (measles, mumps, rubella and chickenpox) |
| 11. Application of the meningococcal C vaccine |
| 12. Application of the 10-valent pneumococcal vaccine |
| 13. Vaccination in institutions for children, for example, schools and day care centers |
| 14. Scheduled appointments for children under 2 years of age, in addition to any unscheduled appointments |
| 15. Group with mothers/fathers |
| 16. Assessment of the growth and neuropsychomotor development of the child |
| 17. Assessment and dietary guidance (breastfeeding, introduction of foods, and others) for the child |
| 18. Identification of child development disorders (genetic, biological, social and family) |
| 19. Guidelines for the prevention of domestic accidents to protect the health of the child |
| 20. Evaluation of visual acuity in institutions for children, for example, schools and day care centers |
| 21. Assessment of auditory acuity in institutions for children, for example, schools and day care centers |
| 22. Guidance for neuropsychomotor stimuli in institutions for children, for example, schools and day care centers |
| 23. Actions for social inclusion and combating prejudice in institutions for children, for example, schools and day care centers |
| 24. Actions for the prevention of domestic accidents in institutions for children, for example, schools and day care centers |
| 25. Absence of cases of congenital syphilis in the last three years |
| 26. Use of a protocol for detecting violence against children and adolescents |
| 27. Identification of physical and psychological symptoms/complaints for the detection of violence against children and adolescents |
| 28. Awareness-raising and training of the team to identify cases of violence against children and adolescents |
| 29. Surveillance of child labor (under 16 years of age) as an alert situation - sentinel event |
| 30. Meetings in partnership with CRAS on child health care |
| 31. Referral to milk bank or access to modified milk if necessary (HIV, others) |
| 32. Training and/or continuing education on child health conducted in the last year |

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Results

Among the 645 municipalities from São Paulo state, 514 participated in the application of the QualiAB in 2017 and 2018. Most municipalities were small (43.3%), with fewer than 10,000 inhabitants. A total of 18.9% had between 10 and 20 thousand inhabitants, 26.2% had between 20 and 100 thousand inhabitants, 10.2% had between 100 and 500 thousand inhabitants, and only 1.4% had more than 500 thousand inhabitants¹¹.

In 2017, the QualiAB online system had 4296 registered PHC services, and responses were received from 2739 (63.8%). In 374 municipalities, there was 100% coverage of the units.

Regarding the type of self-reported service, 45.7% were family health units (FHUs), 22.7% were “traditional” basic health units (BHUs) (teams composed of physicians from different specialties, without community agents), 28.8% were “traditional” BHUs with a community health agent program (PACS) or with a family

Chart 1. QualiAB indicators focusing on disability prevention and early diagnosis by domain in the dimension *Disability Care in Primary Health Care Services*.

| Prevention of disabilities related to chronic conditions |
|---|
| 1. Dressing of acute and chronic ulcers |
| 2. Activities in conjunction with the epidemiological and/or health surveillance team in the community in cases of disease or outbreaks |
| 3. Registry of patients with chronic noncommunicable diseases at differentiated risk |
| 4. Guidelines for the prevention of work-related accidents and diseases |
| 5. Compulsory notification of work-related injuries |
| 6. Conducting an active search for patients with noncommunicable chronic diseases who are not adherent to treatment |
| 7. Fundus examination for patients with type II diabetes mellitus |
| 8. Control, evaluation and guidance for foot care for patients with type II diabetes mellitus |
| 9. Fundus examination for patients with arterial hypertension |
| 10. Actions for men's health with a focus on cardiovascular risk |
| 11. Evaluation of the mental health of elderly individuals (e.g., depression and dementia) |
| 12. Evaluation of the functional capacity of elderly individuals (activities of daily living and instrumental activities) |
| 13. Actions to prevent falls in elderly individuals |
| 14. Encouragement and guidance of body movement and physical activity for the elderly |
| 15. Investigation of the family and social support for elderly individuals |
| 16. Guidelines on the rights of elderly individuals |
| 17. Diagnosis of new cases of leprosy |
| 18. Follow-up of leprosy cases |
| 19. Control of the number of leprosy cases under follow-up |
| 20. Dispensing of drugs for leprosy |
| 21. Supervised treatment at the unit or at home for leprosy |
| 22. Active search for household contacts of individuals with leprosy |
| 23. Active search for absentees undergoing treatment for leprosy |
| 24. Educational actions in the family and in the community pertaining to leprosy |
| 25. Active search for individuals after compulsory notification of disease or condition with indications for need of control of communicants and/or the environment |
| 26. Compulsory notification of leprosy cases |
| 27. Investigation and control of comorbidities associated with alcohol dependence |
| 28. Investigation and control of comorbidities associated with drug abuse |
| 29. Training and/or continuing education for mental health conducted in the last year |
| 30. Training and/or continuing education for the health of elderly individuals performed in the last year |
| 31. Training of the team on the compulsory notification of diseases or conditions |
| 32. Training of the team to care for leprosy cases |

Source: QualiAB 2016 questionnaire⁹.

health team integrated into the emergency care unit, and 2.8% were other types of organizations.

The results for the performance of services within the evaluative dimension *Attention to Disability in Primary Health Care Services* are presented in Table 1.

For the evaluative dimension, 61.6% of services in the QualiAB survey were performed, with the worst percentage being 49.8% and the best being 90.4% in average.

For the domain "Attendance to Prenatal Care", an average of 68.7% of the indicators

were performed. The indicators for this domain suggested that early intervention, i.e., first care provided by a nursing professional on the same day of the positive pregnancy test, occurred at 79.8% of units; 40.5% of the services reported that 80% or more of pregnant women started prenatal care in the 1st trimester; 92.1% recorded data in medical records, pregnancy cards and perinatal records; and 83.9% reported scheduling six or more appointments during prenatal care and weekly appointments in the last month of pregnancy. A total of 93.6% identified high-risk

Chart 2. QualiAB indicators focusing on comprehensive care for people with disabilities by domain in the dimension *Attention to Disability in Primary Health Care Services*.

| Indicators by domain |
|--|
| Structure (inputs and human resources) |
| <ol style="list-style-type: none"> 1. Structural access to services for people with disabilities 2. Bathroom adapted for people with disabilities (PwD) 3. Dressing room 4. Vaccination room 5. Vaccinations 6. Room for conducting educational activities and group sessions 7. Dental office and dental equipment 8. Wheelchair 9. Equipment for urgent and emergency care, such as an emergency cart and oxygen tank 10. Access to ambulances for patient transport, when necessary 11. Vehicle for use by the unit 12. Access to information systems to build the database 13. Presence of a family doctor or general practitioner and a nurse on the health team 14. Presence of a dentist on the health team 15. Presence of a dental assistant or dental hygiene technician on the health team 16. Presence of a nursing assistant or nursing technician on the health team 17. Technical support provided by an NASF and/or multidisciplinary team |
| Attention to people with disabilities and caregivers |
| <ol style="list-style-type: none"> 1. Record of household actions in medical records regarding bedridden people 2. Diagnosis and referral of people with disabilities to other levels of care 3. Home procedures (such as vaccination, change in indwelling urinary catheter, and dressings) for bedridden people 4. Exchange of indwelling urinary catheter 5. Dental care, when possible at the unit, for people with disabilities 6. Periodic home visits with the support of a multidisciplinary team for people with disabilities 7. Periodic home visits with a doctor and/or nurse for people with disabilities 8. Home dental care for bedridden people and dental care for bedridden patients 9. Oral hygiene guidelines for bedridden people 10. Guidelines regarding the social rights of people with disabilities 11. Surveillance and attention to the use of alcohol and other drugs by people with disabilities 12. Actions for the sexual and reproductive health of people with disabilities 13. Surveillance of and attention to violence against people with disabilities 14. Detection, support and monitoring of situations of violence against people with disabilities 15. Communication with the health network and institutions (schools, special schools, among others) regarding people with disabilities 16. Discussion of specific cases with the health network (CRAS, Health Council, CREAS, and other institutions) regarding care for bedridden people 17. Evaluation and monitoring of the health of caregivers of elderly and/or bedridden people (stress and other signs and symptoms) 18. Support group for caregivers of elderly and/or bedridden people 19. Actions for elderly caregivers and/or bedridden people focusing on general guidelines for daily care needs 20. Actions for elderly caregivers and/or bedridden people focusing on guidelines for the prevention and identification of situations of violence 21. Guidance for caregivers of people with disabilities 22. Technical support for the activities of caregivers of elderly and/or bedridden people, if necessary 23. Training of the team for the care of people with disabilities |

Source: QualiAB 2016 questionnaire⁹.

pregnant women, and 61.7% referred them to a reference service and maintained follow-up at the PHC service.

Regarding the procedures recommended during prenatal care, only 10.8% requested all laboratory tests in the first trimester of pregnan-

Chart 3. Independent variables related to planning and evaluation actions in health services (QualiAB indicators).

| Criteria | Independent variables |
|------------------------------|--|
| Characterization of services | <ul style="list-style-type: none"> - Unit type by self-classification - Geographic location of the unit |
| Planning | <ul style="list-style-type: none"> - Unit team meetings weekly or fortnightly - Discussion of cases during team meetings AND elaboration of unique therapeutic proposals (for specific cases) during team meetings - Action planning based on care data from the basic health unit - Planning of actions based on epidemiological data of the population in the area covered by the basic health unit and in the municipality - Action planning through a study on the local health reality conducted in the last three years using data from the programs, demand profile of “extra” (or unscheduled) cases, family registration or community studies - Participatory local planning based on discussions with all service professionals and users - Evaluation and organization of the work process during team meetings - Technical updates during team meetings - Training of physicians through continuing education - Training of the nursing team through continuing education - Training of the oral health team through continuing education |
| Evaluation | <ul style="list-style-type: none"> - Participation in evaluations in the last three years - Evaluation of the service allowed reporting problems identified to the central level of municipal health management - Evaluation of the service enabled the preparation of an annual work plan defined by the municipal management - Evaluation of the service allowed planning and reorganizing the unit's assistance with the participation of all professionals - Evaluation of the service enabled the reorganization of local management strategies |
| Support network | <ul style="list-style-type: none"> - Matrix support per team by the Family Health Care Center (NASF) or multiprofessional - CRAS (Reference Center for Social Assistance) or CREAS (Reference Center Specialized in Social Assistance) - CAPS (Center for Psychosocial Care) or equivalent service - Reference services for STIs, AIDS and viral hepatitis - Specialty outpatient clinics or AME (Specialty Medical Outpatient Clinic) - CEO (Center for Dental Specialties) - CEREST (Reference Center for Occupational Health) - NGO (Non-Governmental Organization) or community actions linked to religious groups |

Source: QualiAB 2016 questionnaire⁹.

cy to identify complications that may cause prematurity, developmental changes or fetal death. In the second and/or third trimesters of pregnancy, only 3.0% requested all tests. A total of 47.3% performed electrocardiograms; 77.3% administered the Tdap vaccine for diphtheria, tetanus and acellular pertussis; 71.8% administered benzathine penicillin; and 74.3% offered syphilis treatment to the pregnant woman and her partner. As a result of these actions, 76.5% reported preventing the vertical transmission of syphilis, and 77.1% reported preventing the vertical transmission of HIV. Furthermore, 83.9% reported

that they provide guidance for partner(s) for evaluation and counseling in cases suggestive of sexually transmitted diseases.

Prevention of anemia and changes in nutritional status during pregnancy was performed by 75.4% of the units; medications with lesser effects on the fetus were prescribed by 81.2% of the units; guidance regarding the risks of smoking and the use of alcoholic beverages and other drugs during pregnancy were reported by 86.6% of the units; evaluation of the working conditions of pregnant women was reported by only 58.4% of the units; evaluation of the history and

Table 1. Performance of PHC services within the dimension and five evaluative domains of Attention to Disability in Primary Health Care services in the QualiAB 2017/2018, state of São Paulo.

| Domain | No. of indicators | Mean | Median | SD | Min | Max |
|--|-------------------|------|--------|-------|------|------|
| Structure (inputs and human resources) | 17 | 73.6 | 76.5 | +16.4 | 58.8 | 88.2 |
| Prenatal Care | 24 | 68.7 | 75.0 | +18.9 | 62.5 | 83.3 |
| Child Health Care | 32 | 56.1 | 59.4 | +19.3 | 59.4 | 90.6 |
| Prevention of Disabilities Related to Chronic Conditions | 32 | 55.8 | 59.4 | +25.0 | 25,0 | 96,9 |
| Attention to People with Disabilities and Caregivers | 25.0 | 96.9 | 52,2 | ±28,0 | 43,5 | 95,7 |
| Attention to Disability in Primary Health Care Services | 23 | 53.7 | 52.2 | +28.0 | 43.5 | 95.7 |
| Attention to Disability in Primary Health Care Services | 126 | 61.6 | 62.0 | +16.8 | 49.8 | 90.4 |

SD: standard deviation; Min: minimum value; Max: maximum value.

Source: Authors.

investigation of childbirth complications during immediate postpartum care were performed by 79.6% of units; guidelines on breastfeeding and iron supplementation in immediate postpartum care were provided by 62.8% of the units; and guidelines for pregnant women about breastfeeding and support for women not able to breastfeed were provided by 89.3% of the units. Finally, the participation of the team in training strategies or continuing education on women's health was reported by 71.7% of the units.

For the domain "Child Health Care," an average of 56.1% of the indicators were performed. Regarding the immediate postpartum period, 87.1% performed assessments of the newborn's conditions of birth and provided guidance on basic care; 89.0% provided guidelines for the care of the newborn (vaccination, exams, others); 70.3% of first visits to the unit were scheduled by a community health agent during a home visit or by the maternity hospital at discharge, postpartum or at the last prenatal visit or by a nurse or doctor; and 87.5% provided guidance on foot, ear and eye tests.

Regarding vaccination, a BCG vaccine was administered in 56.0% of the services, a poliomyelitis vaccine was administered in 76.6% of the services, a pentavalent vaccine was administered in 78.4% of the services, a DTP vaccine was administered in 78.1% of the services, an MMR vaccine was administered in 78.3% of the services, a tetra viral vaccine was administered in 76.5% of the services, a meningococcal C vaccine was administered in 77.5% of the services, a pneumococcal 10-valent vaccine was adminis-

tered in 75.9% of the services. Vaccinations were offered in institutions and day care centers by 66.9% of the units.

Appointments were scheduled for children up to two years of age by 52.7% of the services. Only 20.2% included both mothers and fathers. Measures to prevent disability, growth and NPMD were assessed by 81.0% of the services, food was assessed by 92.0% of the services, developmental disorders were identified by 75.5% of the services, guidelines for the prevention of domestic accidents were provided in the unit by 21.7% of the services and in schools and day care centers by 57.2% of the services, visual acuity assessment were performed by 38.9% of the services, auditory acuity assessments were performed by 16.3% of the services, guidance for neuropsychomotor stimuli was provided by 13.8% of the services, and actions for social inclusion and combating prejudice were implemented by 13.9% of the services. Only 47.4% reported no cases of congenital syphilis in the last three years. Regarding the other actions that promote the protection of children's health and the prevention of postnatally acquired disability, the use of a care protocol for the detection of violence against children and adolescents was reported by only 28.9% of the services, the identification of symptoms, physical complaints and/or psychological disorders was reported by 76.7% of the services, sensitization and training of the team to identify cases was reported by 34.5% of the services, and child labor surveillance was reported by 8.8% of the services. Team meetings in partnership with CRAS on child health care were

held by 39.1% of the services, and referrals to a milk bank or access to modified milk if necessary were provided by 55.0% of the services. Finally, 55.0% offered training and continuing education on child health care.

For the domain “Prevention of Disability in Diseases and Chronic Diseases” an average of 55.8% of the indicators were performed. Dressings for acute and chronic ulcers were provided by 94.7% of the services, activities together with the epidemiological and/or health surveillance team in the community regarding diseases or disease outbreaks were held by 73.8% of the services, patients with chronic noncommunicable diseases at differentiated risk were identified by 43.7% of the services, guidelines for the prevention of accidents and work-related diseases were provided by 33.8% of the services, compliance with the mandatory reporting of work-related diseases was reported by 44.2% of the services, and active searches for patients with noncommunicable diseases who were nonadherent to treatment were conducted by 68.8% of the services.

Diabetes, hypertension and leprosy are risk factors for limiting health conditions. Thus, routine actions for the care of these diseases are valued. Regarding type II diabetes mellitus, control, evaluation and guidance for foot care for patients with type II diabetes mellitus were offered by 78.9% of the services, and fundus examinations were performed by 41.7%. Fundus examinations for patients with arterial hypertension were performed by only 20.6% of the services. Actions for men’s health focusing on cardiovascular risk were implemented by 64.5% of the services.

With respect to elderly individuals, mental health assessments were performed by 69.0% of the services, and assessments of the functional capacity to perform activities of daily living and instrumental activities were performed by 51.1% of the services. Actions for the prevention of falls among elderly people were implemented by 64.0% of the services, encouragement and guidance of body movement and physical activity for elderly people were provided by 72.2% of the services, and guidance on social rights was provided by 41.5% of the services.

Regarding care for leprosy, the diagnosis of new cases was reported by 63.3% of services, follow-up of leprosy cases was reported by 62.3% of the services, control of the number of cases was reported by 52.7% of the services, dispensing of leprosy drugs was reported by 34.0% of the services, supervised treatment in the unit and at home was reported by 34.3% of the services,

compliance with mandatory notification was reported by 69.3% of the services, active searches for intrahousehold contacts were performed by 67.2% of the services, searches for treatment absentees were performed by 65.1% of the services, and, educational activities for the family and in community on this subject were offered by 54.5% of the services.

For surveillance actions, 88.0% performed active searches for individuals with diseases requiring mandatory notification with the goal of controlling communicants and/or the environment, 39.4% investigated and controlled comorbidities associated with alcohol dependence, and 37.9% investigated drug abuse.

Regarding the participation of the team in training and continuing education activities in the last year, 48.8%, 40.9%, 63.2%, and 45.2% of services reported such training on mental health, the health of elderly people, disease or condition requiring mandatory reporting, and attention to cases of leprosy.

Regarding the “Structure” domain, an average of 73.6% of the indicators were performed; 77.0% reported having structural access to PwD, 67.6% reported having adapted bathrooms, 89.5% reported having dressing rooms, 81.2% reported having vaccine rooms, 80.6% reported offering vaccinations, and 51.3% reported having rooms for group activities, and 77.8% reported having a dental office and dental equipment. Regarding supplies, 92.7% had a wheelchair, and only 40.7% had equipment for urgent/emergency care. Access to ambulances for transporting patients was reported by 87.5% of the services, access to transport vehicles was reported by only 37.8% of the services, and access to information systems to build the database was reported by 86.7% of the services.

Regarding the professionals working in the service, 85.4% reported having a general practitioner or family health doctor and a nurse; 98.0% reported having a nursing assistant or nursing technician; 65.2% reported having a dental surgeon; 63.7% reported having a dental assistant or dental hygiene technician; and 69.0% reported have an NASF technical support team and/or multidisciplinary team.

For the domain “Attention to People with Disabilities and Caregivers”, an average of 53.7% of the indicators were performed, the lowest average among all domains. Among the services that provided responses, 79.4% reported performing home actions for bedridden people in the medical records, 84.6% reported providing

guidance for home procedures, 77.2% reported performing indwelling urinary catheter exchanges, 80.2% reported referrals to other levels of care after diagnosis, 58% reported providing dental care in the unit when possible, 24.5% provided home dental care and dental care for bedridden patients, 64.8% provided oral hygiene guidelines, 51.2% conducted periodic home visits with a multidisciplinary team, 69.2 conducted periodic home visits with a doctor and/or nurse, 45.9% provided guidance on social rights, 33.4% provided surveillance of and attention to the use of alcohol and other drugs, 35.9% implemented actions pertaining to sexual and reproductive health, 41.4% provided surveillance of and attention to violence, 35.8% offered detection, support and follow-up for situations of violence, 43.0% communicated with the health network and institutions (schools and day care centers, among others), and 59.8% discussed specific cases with the health network (CRAS, Health Council, CREAS, and others).

Regarding caregivers, 39.2% performed evaluations and follow-ups of caregivers' health, 7.8% offered support groups, 79.0% implemented actions for caregivers of elderly and/or bedridden people with focus on general guidelines for daily care needs, 52.2% implemented actions for caregivers of elderly and/or bedridden people with a focus on prevention and identification of situations of violence, 77.9% provided guidance for caregivers, and 59.6% provided technical support if necessary. Finally, 36.5% of PHC services performed team training on care for PwD.

Table 2 shows the results for the multiple linear regression models for the domain and dimension scores for variables pertaining to planning, health evaluations and support network; some results were statistically significant ($p < 0.05$).

In the analysis of the independent variables, in which the FHU was the main protective factor against an increase in the score for all domains and for the assessed dimension, with higher values indicating a positive relationship. Other variables were also positively associated with the evaluation dimension and all domains: having an NASF or multidisciplinary team as a support network, having participated in service evaluation processes, and having an annual work plan as an outcome of the evaluation. None of the studied variables was negatively related to the evaluative dimension *Attention to Disability in Primary Health Care Services*.

In the "Structure" domain, in addition to the variables above, being a mixed unit, having an

urban and central location and having the CRAS or the CREAS as a network to support were positively associated with the score. Being located in a rural area and having to train the oral health team negatively influenced the outcome of the domain.

For "Antenatal care", the variables that also had a positive relationship were having the CRAS or CREAS as a support network and having problems in the service reported to the central management level because of the evaluation. The variables with negative relationships were BFUs or organizational arrangements other than FHUs, traditional units or BFUs with outposts, and a specialized outpatient clinic as a support network.

The domain "Child Health Care" was positively related to the following independent variables: action planning based on studies conducted in the last three years and program data, demand profile of "extra" (or unscheduled) cases, registration of families or community studies, having the CRAS or CREAS as a support network, and having identified problems reported to the central level of management. In turn, this domain was negatively related with BHU, another type of service and having a specialized outpatient clinic as a support network.

In addition to the aforementioned, prevention of disability in diseases and chronic diseases was positively related to a central urban location, having the CRAS and CREAS as a support network, and having identified problems reported to the central level of management. This domain was negatively related to BHU, mixed units and other types of services.

"Attention to People with Disabilities and Caregivers" was positively related to other types of services and the reporting of problems identified to the central level of management, in addition to the indicators already addressed. This domain was negatively related to BHU or mixed unit and central urban location.

Finally, in addition to variables that were associated with all domains and with the dimension, there was a positive association between *Attention to Disability in Primary Health Care Services* and having the CRAS and CREAS as a support network and the reporting of problems identified in the service to the central management level and a negative association between *Attention to Disability in Primary Health Care Services* and BHU or another type of PHC service, continuing education for physicians, and specialty outpatient clinics as a support network.

Table 2. Results of the multiple linear regressions for the scores for variables in the five domains and the dimension pertaining to service typology, planning, evaluation and support network with $p < 0.05$, QualiAB 2017/2018.

| Independent variable | Structure | | Prenatal | | Child health | | Prev. Disability | | Attention PwD | | Size | |
|---|--------------|-------------|--------------|-------------|--------------|-------------|------------------|-------------|---------------|-------------|---------------|-------------|
| | β | p | β | p | β | p | β | p | β | p | β | p |
| FHU | 62.09 | 0.00 | 60.13 | 0.00 | 45.20 | 0.00 | 41.59 | 0.00 | 47.32 | 0.00 | 49.81 | 0.00 |
| BHU | -1.61 | 0.07 | -3.73 | 0.00 | -4.80 | 0.00 | -16.45 | 0.00 | -23.38 | 0.00 | -10.36 | 0.00 |
| MIXED | 4.46 | 0.00 | 0.42 | 0.61 | 0.50 | 0.54 | -3.06 | 0.00 | -2.85 | 0.01 | -0.44 | 0.50 |
| Other type of service | -1.80 | 0.37 | -9.29 | 0.00 | -7.34 | 0.00 | -7.44 | 0.00 | -11.58 | 0.00 | -7.71 | 0.00 |
| Rural location | -14.62 | 0.00 | -0.77 | 0.54 | 0.34 | 0.78 | 2.75 | 0.05 | -0.21 | 0.89 | -1.46 | 0.14 |
| Urban location (Central) | 1.74 | 0.02 | 0.20 | 0.79 | 1.14 | 0.13 | 3.05 | 0.00 | -2.88 | 0.00 | 0.81 | 0.19 |
| Planning of actions through a study of the local health reality conducted in the last three years, data from programs, demand profile of "extra" (or unscheduled) cases, family registration or community studies | 0.71 | 0.40 | 1.46 | 0.10 | 1.84 | 0.04 | 1.43 | 0.16 | 1.11 | 0.33 | 1.38 | 0.05 |
| Physicians - continuing education | -1.00 | 0.26 | -1.44 | 0.12 | -1.48 | 0.10 | -1.48 | 0.16 | -1.97 | 0.10 | -1.49 | 0.04 |
| Training of the oral health team through continuing education | -3.61 | 0.04 | 0.21 | 0.91 | 0.19 | 0.92 | -1.88 | 0.37 | -3.82 | 0.10 | -1.56 | 0.28 |
| CRAS or CREAS as a support network | 2.59 | 0.00 | 2.04 | 0.02 | 2.29 | 0.01 | 2.65 | 0.01 | 0.43 | 0.70 | 2.04 | 0.00 |
| Specialty outpatient clinic as a support network | -0.54 | 0.48 | -2.40 | 0.00 | -2.50 | 0.00 | -1.36 | 0.14 | -1.93 | 0.06 | -1.82 | 0.00 |
| Matrix support by the NASF or multiprofessional team | 4.73 | 0.00 | 2.44 | 0.02 | 2.92 | 0.00 | 4.06 | 0.00 | 3.50 | 0.01 | 3.47 | 0.00 |
| Participation in service evaluation processes | 1.64 | 0.03 | 2.64 | 0.00 | 3.64 | 0.00 | 3.45 | 0.00 | 4.00 | 0.00 | 3.19 | 0.00 |
| Evaluation of the service allowed problems identified to be reported to the central level of municipal health management | 0.93 | 0.23 | 2.43 | 0.00 | 3.89 | 0.00 | 6.25 | 0.00 | 5.52 | 0.00 | 4.08 | 0.00 |
| Evaluation of the service enabled the elaboration of an annual work plan defined by the municipal management | 3.86 | 0.00 | 5.67 | 0.00 | 5.96 | 0.00 | 11.22 | 0.00 | 10.12 | 0.00 | 7.66 | 0.00 |
| Evaluation of the service allowed planning and reorganizing the unit's assistance with the participation of all professionals. | 3.02 | 0.00 | 2.42 | 0.00 | 4.62 | 0.00 | 7.13 | 0.00 | 8.70 | 0.00 | 5.33 | 0.00 |

Structure: Structure domain (inputs and human resources). Prenatal care: Prenatal care domain. Child Health: Child health care domain. Prev. Disability: Prevention of disabilities related to chronic conditions domain. Attention PwD: Attention to people with disabilities and caregivers domain. Dimension: Attention to Disability in Primary Health Care Services.

Source: Authors.

Discussion

The results showed that the PHC services evaluated have limitations as a component of an RCP-wD and that there were weaknesses that managers should seek to overcome to strengthen and consolidate policies and guidelines already implemented.

The average performance of the *Attention to Disability in Primary Health Care Services* is similar to the performance of its domains. The minimum and maximum values and standard deviation show great disparity. Therefore, there are services that are better structured and organized, and others are ideal. Regarding disability, initial diagnosis and referral to secondary and tertiary

levels should be made without maintaining follow-up in the PHC service. However, this analysis does not explain why actions to prevent disability at birth and acquired disabilities are still so incipient because prenatal care, child health care and chronic diseases are theoretically more appropriate topics as an object of study in PHC services. Notably, PHC in the State of São Paulo has low coverage of FHU services, resulting in a heterogeneous network¹².

The performance of the “Structure” domain was the highest among the domains. Architectural accessibility barriers represent obstacles that prevent individuals with physical disabilities from exercising their rights to access health care, social inclusion and strengthening of their participation as citizens¹³.

The evaluative domains “Prenatal care” and “Child Health” had higher response rates with regard to offering procedures, such as exams, vaccines and treatments. However, the actions that required a closer relationship between planning, organization and training reduced the domain score, indicating that the services do not have the necessary knowledge and technical resources as stated in the primary care booklet for low-risk prenatal care n° 32¹⁴, of *Rede Cegonha*¹⁵, of Decree no. 60,075 of January 17, 2014¹⁶, concerning the State Program for Assistance to Persons with Intellectual Disabilities: São Paulo for Equal Rights.

Vaccination, offered by PHC units as measures to protect the health of pregnant women, guarantees prenatal care and child health. The vaccination coverage rate in 2017 in the state of São Paulo was 67.29%¹⁷, much lower than expected, corroborating the urgent need for immediate strengthening because the decrease in coverage has caused major public health problems.

The national neonatal screening program emphasizes the importance of performing the red reflex test for the prevention of childhood blindness¹⁸. The red reflex test, also known as the red reflex test, is an exam that should be performed in babies and can be used to detect and prevent eye changes or prevent further aggravation of any eye changes. In Brazil, only 51.1% of children under 2 years of age undergo surgery in the first month of life¹⁹.

When children belong to a specific population group, such as those with disabilities, they tend to experience social exclusion²⁰. The national policy for the integration of persons with disabilities guarantees access of this population group to all community services and integration

in all areas of society²¹. A community approach should also be used to establish strategies that involve the family, the community, services and health professionals as a strategy to provide comprehensive care to PwD²².

Educational activities in school environments are important tools for promoting quality of life; however, these activities should go beyond a biological emphasis²³. The findings of this study demonstrate that there is low incorporation of these activities by health services.

The domain “Prevention of disability in diseases and chronic diseases”, for which performance was unsatisfactory, has several indicators that demonstrate the ability of PHC teams to organize work processes to prevent acquired disabilities that generate functional limitations, for example, amputation and cerebrovascular and cardiovascular diseases.

The guidelines for caring for amputees²⁴ emphasizes the importance of the role of PHC services in monitoring and assisting users diagnosed with diseases that may lead to limb amputation. These guidelines promote the early diagnosis, the supply of necessary medications for treatment, the provision of multidisciplinary care, the referral to other levels of care, and the assistance to individuals with amputations to ensure comprehensive care, that is, ensure all care and assistance needs are met beyond the specific care resulting from the amputation. Luccia and Silva²⁵ reported that approximately 80% of lower limb amputations are performed in patients with peripheral vascular disease and/or diabetes.

Occupational health surveillance is also valued in the indicators present in this domain, demonstrating the incipience of actions focused on prevention. Importantly, there is a higher prevalence of disabling work accidents among males⁵.

Violence is a prominent condition in health policies and it is difficult to institutionalize surveillance and care practices, as seen in the results. Notably, the various indicators present in the domains that address this phenomenon are generic, but they are interrelated with health protection and the prevention of acquired disability. Alcohol and other drugs are also risk factors for the occurrence of disabilities. The use of psychoactive substances, in addition to implications for pregnancy and during childhood and adolescence, also allows for changes in NPMD and aggravates situations of risk and vulnerability.

Regarding the maintenance of follow-up of PwD addressed in the domain “Attention to Peo-

ple with Disabilities and Caregivers”, the main positive responses pertain to referrals to specialized services, followed by guidance to caregivers and home visits by physicians and/or nurses and the multidisciplinary team.

Home visits, as tools for access, comprehensiveness and longitudinal care, are often hampered by the need to cover 2,400 to 4,000 or more individuals within a territory covered by a PHC service, which negatively contributes to the effectiveness of home care as a routine action of services, given the overload of demand on health professionals²⁶.

The adherence to actions aimed at caregivers in the school environment is low, and services geared toward issues such as the rights of elderly individuals, technical support, the evaluation and monitoring of caregiver health and the support groups for caregivers are almost absent in the responses. Caregivers have important roles in the connection of an individual to care and health services in situations of partial or total dependence. Thus, it is necessary to strengthen the care actions for these formal or informal workers, whether they are family members or not, given the emotional and occupational overload generated by the provision of care²⁷.

The multiple linear regression analysis of independent variables had a significant relationship with the domains and with the evaluated dimension, indicating that the main factors were the type service (FHU), the participation of the service in the evaluation processes and development of an annual work plan, reorganization of care, and having the NASF or a multidisciplinary team as support.

Several studies^{28,29} have shown better results of FHUs performance. The other types of services, such as traditional or mixed BHUs or other services not addressed in the instrument negatively influenced the results in most aspects studied.

A central urban location had a positive influence on the “Structure” domain and the “prevention of disability” domain but with a low beta value due to the greater availability of a support network or structure. Moreover, the “structure”

domain was negatively related to rural location, suggesting these services have lower conditions of accessibility and availability of inputs.

Notably, in addition to the NASF and multidisciplinary teams, the presence of services such as the CRAS or CREAS were positively related with most scores. There are several studies that demonstrate the impact of the creation of multidisciplinary teams and an NASF for the implementation of PHC, in favor of a more resolute offer of actions that cover the complexity of health-disease processes³⁰. The same is true for the partnership between health units and social assistance teams, enabling case discussions and interactions with other levels of health care³¹.

The training strategies for team members was not statistically significant, with the exception of continuing education for physicians, which had a negative influence on the general dimension. The presence of specialized medical outpatient clinics was also negatively related to scores, specifically those in the domains related to prenatal care and child health and in the overall dimension, albeit with low beta values. It is not possible clearly explain this result; however, there is still much to be done in consolidation of the dynamic of health care networks because services often operate in isolation and without referral and counterreferral processes and flows.

Several planning indicators were not significantly related to the domain and dimension scores, largely because they occurred at low or medium frequencies, demonstrating weaknesses in the implementation of these services.

Therefore, the data show that there is still much to be done to assess the approach to disability by PHC services; even though the RCPwD has been published since 2012 for the organization of the health system, the effective construction of care networks depends on the complex construction of micro and macro policies.

Despite the lack of specificity of the QualiAB instrument on the subject, the evaluation model proved to be a good strategy for assessing the practices implemented in PHC services on the subject of “disability”, covering different topics within prevention, promotion and health care.

Collaborations

There was effective participation of all authors involved in the work, making their responsibility for the content presented public.

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