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# Analysis of the health situation in the municipality of Criciúma/SC using previne Brasil indicators

## Análise de situação de saúde do município de Criciúma/SC utilizando indicadores do previne Brasil

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**Abstract**
Introduction: Primary Health Care (known in Brazil by the Portuguese acronym APS) aims to provide comprehensive, humanized and quality care, always attentive to epidemiological and sociodemographic changes in the population. Given the importance of knowing the health status of the population, the present study was based on the indicators established by the *Previne Brasil* Program, to assess the current health situation in Basic Health Units (known in Brazil by UBS) of a municipality in the extreme south of Santa Catarina. Materials and Methods: This is a cross-sectional, descriptive and exploratory study with a quantitative approach. For data collection, a set of questionnaires were constructed which addressed the aspects present in the National Program for the Improvement of Access and Quality of Primary Care (PMAQ) and in the *Previne Brasil* Program. Results: 44 basic health units were considered eligible for the survey, and 179 users and 45 health professionals participated in the survey. Conclusions: It is noteworthy that most of the units participating in the research complied with the seven indicators of the program, however, it is emphasized that the health services of the municipality are still in the process of adapting to the new health indicators, evidenced in the percentages found regarding the Haemophilus Influenzae (HIB) vaccine, recently added to the *Previne Brasil* Program.
**Keywords:** primary health care; comprehensive health care; basic health indicators

**Resumo**
Introdução: A Atenção Primária à Saúde (APS) possui como objetivo um atendimento integral,

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humanizado e de qualidade, sempre atenta às mudanças epidemiológicas e sociodemográficas da população. Diante da importância de conhecer o estado de saúde da população, o presente estudo baseou-se nos indicadores estipulados pelo Programa Previne Brasil, para avaliar a atual situação de saúde nas unidades básicas de saúde (UBS) de um município do extremo sul catarinense. Materiais e Métodos: Trata-se de um estudo transversal, descritivo e exploratório, com abordagem quantitativa. Para a coleta de dados, foram construídos um conjunto de questionários que abordavam os aspectos presentes no Programa Nacional de Melhoria do Acesso e da Qualidade da Atenção Básica (PMAQ) e no Programa Previne Brasil. Resultados: Foram consideradas elegíveis para a pesquisa 44 unidades básicas de saúde, e participaram da pesquisa 179 usuários e 45 profissionais de saúde. Conclusões: Destaca-se que a maior parte das unidades participantes da pesquisa contemplaram os sete indicadores do programa, no entanto, salienta-se que os serviços de saúde do município ainda estão em processo de adaptação aos novos indicadores de saúde, evidenciado nos percentuais encontrados em relação à vacina Haemophilus Influenzae (HIB), adicionada recentemente ao Programa Previne Brasil.

**Palavras-chave:** atenção primária à saúde; assistência integral à saúde indicadores básicos de saúde

## Introduction

Brazil created the Unified Health System (Sistema Único de Saúde [SUS]) in a period of emergence of social policies in the late 1980s with the proposal to move towards universal provision of public health services and to decentralize political power in the spheres of government, allowing states and municipalities greater autonomy to implement policies[1]. One of the measures taken to reorganize health care model in the country was to invest in Primary Health Care (APS), internationally recognized as a benefit factor in sustaining quality health systems[2].

According to Portela[3], in Brazil, the different experiences of organizing and offering APS in the health system converged to the Family Health model, progressively adopted from the 1990s as a priority strategy for the expansion and consolidation of APS in the country. The growing interest in evaluating progress and gaps in Primary Health Care (APS) over the last 30 years[1-8] has contributed to the development of the Unified Health System (SUS) and the Family Health Strategy (ESF), by producing evidence on the reach of universality, integrality and equity[4].

In 2011, quality got a strong boost in Brazilian APS with the implementation of the Access and Quality Improvement Program (PMAQ), which institutionalized the financial incentive of the Ministry of Health (MS) to improve the standard of care offered to SUS users in the Basic Units of Health (UBS) and through family health teams[5]. In November 2019, the Ministry of Health launched a new financing policy for Primary Health Care (APS), called *Previne Brasil*, in order to strengthen the essential and derived attributes of APS proposed by Starfield[6]. *Previne Brasil* seeks synchrony rescuing the historically established principles of APS and the organizational modernization that the 21st century and the social and cultural changes impose on us[7], being possible to obtain information about the scenarios through the indicators, contributing to the creation of new public policies as well as being tools for monitoring and evaluating health services and interventions and, in addition, its results subsidize the financial support for the maintenance of APS health services[8].

In this regard, *Previne Brasil* is understood as a financial model which is supported on the basis of a moderate fundraising, payment for performance, financial incentives with a population criteria and incentives for strategic actions, which are established as ways to improve the population's access to the health network and the co-responsibility of managers and workers. For the year 2022,

seven indicators formed the proposition of the payment for performance, namely, the proportion of pregnant women who had at least 6 (six) prenatal doctor´s appointments, within the period of the 1st (first) up to the 12th (twelfth) week of pregnancy; Proportion of pregnant women tested for syphilis and HIV; Proportion of pregnant women with dental care provided; Proportion of women with Pap smear collect in APS; Proportion of 1 (one) year old children vaccinated in APS against Diphtheria, Tetanus, Pertussis, Hepatitis B, infections caused by Haemophilus influenzae type B and Inactivated Poliomyelitis; Proportion of people with hypertension, who had a doctor´s appointment and the blood pressure measured in the semester; Proportion of people with diabetes, who had a doctor´s appointment and glycated hemoglobin requested in the semester[9].

Compared to the previous APS funding program, called the National Program for the Improvement of Access and Quality of Primary Care (PMAQ), which aimed at expanding and improving the quality of APS with equity at the national, regional and local levels, aiming at improving the physical structure of health units and work processes, subsidized by two pillars, the Basic Health Care Package (in Brazil, PAB), fixed, established by the population contribution and the variable PAB according to the municipality complied with and carried out health policy actions. *Previne Brasil* Program, on the other hand, has its biggest difference, concerning the PMAQ, in the proposition of direct actions related to the proposed indicators, and in the payment model reformulation, now structured in 4 (four) bases[10].

Therefore, the present study is based on the indicators established by the *Previne Brasil* Program and has as its objective to assess the current health situation in the basic health units (UBS) in the municipality of Criciúma, located in the extreme south of Santa Catarina.

## Materials and Methods

### Sample and type of study

This is a cross-sectional, descriptive and exploratory study, with a quantitative and census approach, carried out in March 2022 in the municipality of Criciúma/SC. The micro-region of the study belongs to the extreme south of Santa Catarina, and according to data from the IBGE (Brazilian Institute of Geography and Statistics) it has a population of 215,186 inhabitants, being considered the fifth largest municipality in number of inhabitants. The economy of the region is derived from coal mining, industry, agriculture and livestock. In 2017, the Gross Domestic Product (in Brazil, PIB) per capita was R$33,811.63, 36.5% of the population was employed and the average salary was 2.6 minimum wages. The population is mostly made up of women and according to the data reported in the last census, it is in the process of aging. Therefore, it is a population susceptible to several chronic health conditions.

### Research design

179 (a hundred seventy-nine) users participated in the survey, with an average of four users interviewed per Basic Health Unit (UBS), Family Health Strategy (ESF), or 24 hour-Polyclinic. And, 45 health professionals, being 81.8% of which unit managers.

### Inclusion and Exclusion Criteria

To carry out the present study, 44 (forty-four) out of the 47(forty-seven) health units were considered eligible for the research, and they were divided among ESFs, UBSs and ESF/UBSs. The 3 (three) non-participating units were under renovation during the study, making data collection in these locations impracticable.

**Procedures**

Three questionnaires were used for data collection: Block A – Questions about the physical structure of the unit, such as availability of supplies, availability of immunobiologicals, accessibility and installation conditions; Block B – Questions about Primary Health Care professionals` responsibilities, in order to understand their perceptions about the work process and organization; Block C – Questions about the perception of users of the procedures, organization, functioning, satisfaction and social participation. The elaboration of the questionnaires was based on the National Program for the Improvement of Access and Quality of Primary Care (PMAQ) and the *Previne Brasil* Program, which had as their objective the expansion of access and the improvement of quality in primary care, in addition to producing greater transparency and effectiveness of government actions at this level of health care attention. Despite being based on those programs, the questionnaires were restructured according to the demand listed by the municipality. Block A and Block B were applied, preferably, to the unit manager, or to an employee who had higher education in the health area and more than 6 months of experience in that unit. As for Block C, it was answered by four users of the service.

It is worth noting that the ethical principles, approved by the Ethics Committee for Research with Human Beings (CAAE: 48125421.8.0000.0119), were duly complied with. Data were collected using Google Forms and the Epicollect 5 application, later tabulated in the Microsoft Excel program and analyzed in the Software for Statistics and Data Science – Stata version 14.0. There were gaps in the data in Table 1 due to t he transfer of data from the physical questionnaires to the digital database.

## Results

Regarding the general characteristics of the respondents and the structure of the health units, 81.8% (No=36) of the respondents were managers of the units, and among these 65.9% are trained nurses, and as for the managers in total 56 .8% had a post-graduate degree. Concerning the structure of the units, a large part (81.8%) is a Family Health Strategy and only 1 (2.2%) is a polyclinic/UBS/ESF. With regard to the distribution of units by health districts, 10 are in the *Próspera* district, 8 in the city center, 8 in the *Santa Luzia* district, 7 in the *Rio Maina* district, 5 in the *Quarta Linha* district and 5 in the *Boa Vista* district.

For the year 2022, the new primary care financing model considered seven health indicators, namely; the proportion of pregnant women who had at least 6 (six) prenatal doctor´s appointments, within the period of the 1st (first) up to the 12th (twelfth) week of pregnancy; Proportion of pregnant women tested for syphilis and HIV; Proportion of pregnant women with dental care provided; Proportion of women with Pap smear collect in APS; Proportion of 1 (one) year old children vaccinated in APS against Diphtheria, Tetanus, Pertussis, Hepatitis B, infections caused by Haemophilus influenzae type B and Inactivated Poliomyelitis; Proportion of people with hypertension, who had a doctor´s appointment and the blood pressure measured in the semester; Proportion of people with diabetes, who had a doctor´s appointment and glycated hemoglobin requested in the semester[9]. Regarding this financing model, when respondents were asked about their participation in the *Previne Brasil* Program, 95.5% (No=41) of the units said they participated, 1(one) said he did not know and 1(one) said he did not participate in the program. But, when respondents were asked about the importance of the Program, 95.3% considered it important. For such information, the strategies that the municipality of Criciúma uses to achieve

the proportions of health indicators are described in the tables below:

Table 1 shows data about the pregnant women who underwent prenatal care up to 6 months, rapid tests and dental care, in relation to the monitoring of the pregnant women's booklets and cards, 43 (100%) answered “yes”. In addition to prenatal doctor´s appointments, 42 (97.18%) of the interviewees confirmed that there were offers. As well as rapid tests with 39 (90.7%) of the sample, and guidelines for sexually transmitted infections (in Brazil, ISTs), 44 (100%) stated that they had occurred. As for dental care for pregnant women in the APS, table 1 shows that the referral to dental prenatal care and scheduled by telephone, included 29 (90.63%) of the sample, in relation to information and making an appointment for prenatal dental care, the table shows that 27 (81.82%) of the pregnant women reported not having received instructions.

**Table 1 - Quantity-related proportion of pregnant women who underwent prenatal care up to 6 months, rapid tests and dental care.**

| **INDICATOR 1 - Proportion of pregnant women who had at least 6 (six) prenatal doctor`s appointments, being the 1st up to the 12th week of pregnancy.** | | | | |
|---|---|---|---|---|
| Variables | Yes | No | Do not know | No. |
| Search for patients in the prenatal period? | 41 (93,18%) | 2 (6,81%) | - | 44 |
| Plan appointments offer for prenatal period? | 42 (97,61%) | 1 (2,38%) | - | 44 |
| Use the booklet or card when monitoring pregnant women? | 43 (100%) | - | - | 44 |
| Input data into the prenatal information system? | 42 (95,45%) | 2 (4,55%) | - | 44 |
| **INDICATOR 2 - Proportion of pregnant women tested for syphilis and HIV** | | | | |
| Rapid tests offer | 39 (90,7%) | 3 (3,98%) | 1 (2,33%) | 43 |
| Educate pregnant women about ISTs | 44 (100%) | - | - | 44 |
| **INDICATOR 3 - Proportion of pregnant women with dental care performed. (Strategies to facilitate the referral of pregnant women to dental prenatal care)** | | | | |
| Same-day referrals of pregnant women to dental prenatal care . | 26 (70,27%) | 11 (29,73%) | - | 37 |
| Referrals of pregnant women to dental prenatal care with scheduled date and time | 20 (55,56%) | 16 (44,44%) | - | 36 |

| | | | | |
|---|---|---|---|---|
| Referrals of pregnant women to dental prenatal care, where the unit schedules the appointment and informs the pregnant women | 6 (18,18%) | 27 (81,82%) | - | 33 |
| Referrals of pregnant women to dental prenatal care. The appointment must be scheduled via telephone by the pregnant women. | 29 (90,63%) | 3 (9,38%) | - | 32 |
| Referrals of pregnant women to dental prenatal care. There is no set way. | 19 (82,61%) | 4 (17,39%) | - | 23 |

Source: The authors, 2022.

Table 2 shows the percentage of women who underwent cytopathological collection in Primary Health Care, with regard to the cytopathological examination/collection conducted at the unit, 41 (95.35%) answered “yes”. As well as when asked if the team had a record of eligible women for the cytopathological test, 38 (88.27%) claimed 'yes'.

**Table 2 – Percentage of women who underwent Pap smear collection in Primary Health Care (APS).**

| **INDICATOR 4 - Proportion of women with Pap smear collection in APS** | | | | |
|---|---|---|---|---|
| Variables | Yes | No | Do not Know | No. |
| The team has a record of women who are eligible for Pap smear exam. | 38 (88,27%) | 5 (11,63%) | - | 43 |
| The unit actively searches for women with delayed Pap smear exam? | 20 (68,97%) | 6 (20,69%) | 3 (10,34%) | 29 |
| Do the Pap smear exam/collection in the unit? | 41 (95,35%) | 2 (4,65%) | - | 44 |

Source: The authors, 2022.

Table 3 shows the proportion of one-year-old children vaccinated in Primary Health Care. With regard to get vaccination in the unit, 43 (93.33%) said they performed the procedure. As for the availability of Polio and Pentavalent vaccine (diphtheria, tetanus, pertussis, hepatitis B), 39 (86.67%) confirmed the offer in the unit.

**Table 3 – Distribution regarding to one-year-old children vaccinated in Primary Health Care.**

| **INDICATOR 5 - Proportion of one-year-old children who were vaccinated in APS against diphtheria, tetanus, pertussis, hepatitis B, infections caused by Haemophilus influenzae type B and inactivated poliomyelitis** | | | | |
|---|---|---|---|---|
| Variables | Yes | No | Do not know | No. |
| Monitors the vaccination of children in the territory | 28 (96,55%) | 1 (3,45%) | - | 29 |
| Is vaccination performed at the unit? | 43 (93,33%) | 3 (6,67%) | - | 45 |

| | | | | |
|---|---|---|---|---|
| Are vaccines for Polio available at the unit? | 39 (86,67%) | 5 (11,11%) | 1 (2,22%) | 45 |
| Are HIB vaccines (Haemophilus influenzae vaccine) available at the unit? | 31 (68,89%) | 13 (28,89%) | 1 (2,22%) | 45 |
| Are Pentavalent vaccines (diphtheria, tetanus, pertussis, hepatitis B) available at the unit? | 39 (86,67%) | 5 (11,11%) | 1 (2,22%) | 45 |

Source: The authors, 2022.

Table 4 identifies the distribution of people with non-communicable chronic diseases with doctor´s appointments in Primary Health Care. It is possible to observe that 42 (92.45%) UBSs have records of users diagnosed with arterial hypertension and 17 (58.62%) of the teams actively search for patients with such a diagnosis. However, 9 (45%) do not schedule doctor´s appointments according to the risk which is established for hypertension. Regarding the records of people diagnosed with diabetes, 42 (95.55%) affirm. And also, 26 (70.27%) confirm doctor´s appointments offers for people with diabetes.

**Table 4 - Distribution of people with non-communicable chronic diseases with doctor`s appointments in Primary Health Care.**

| **INDICATOR 6 - Proportion of people with hypertension, with doctor`s appointments and blood pressure measured in the semester** | | | | |
|---|---|---|---|---|
| Variables | Yes | No | Do not know | No. |
| Is there a record of users who are diagnosed with arterial hypertension? | 42 (92,45%) | 2 (4,55%) | - | 44 |
| Offers doctor`s appointments for hypertension? | 27 (72,97%) | 10 (27,03%) | - | 37 |
| Schedules doctor`s appointments according to the risk which is established for hypertension? | 10 (50%) | 9 (45%) | 1 (5%) | 20 |
| Actively searches for patients diagnosed with hypertension? | 17 (58,62%) | 9 (31,02%) | 3 (10,34%) | 29 |
| **INDICATOR 7 - Proportion of people with diabetes, with doctor`s appointment and glycated hemoglobin requested in the semester.** | | | | |
| Is there a record of people diagnosed with diabetes in the territory? | 42 (95,55%) | 2 (4,55%) | - | 44 |
| Offers doctor`s appointments for people with diabetes? | 26 (70,27%) | 11 (29,73%) | - | 37 |
| Schedules doctor`s appointments according to the risk which is established for people with diabetes? | 10 (47,62%) | 10 (47,62%) | 1 (4,67%) | 21 |
| Actively searches for patients diagnosed with diabetes? | 17 (58,62%) | 9 (31,03%) | 3 (10,34%) | 29 |

Source: The authors, 2022.

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## Discussion

Regarding indicator 1, the proportion of pregnant women with at least 6 (six) prenatal appointments, within the period of the 1st (first) up to the 12th (twelfth) week of pregnancy, it is found that in the network, 93.1% of the units actively search for pregnant women for prenatal care, all (100%) use the pregnant women's booklet with the pregnant women of the the unit and 95.4% regularly feed the information system on prenatal care.

In his study, Leal[11] claims that prenatal care is a set of actions that are simultaneously preventive, health-promoting, diagnostic and curative, aiming at a good outcome of the pregnancy for the women and their children. Thus, the Southeast, South and Midwest regions had the highest prevalence of women with early prenatal care and the Southeast region had the highest coverage of women with at least six prenatal doctor´s appointments, which corroborate the data of research.

It was analyzed that the proportion of women who had six or more doctor´s appointments during pregnancy was higher among the older ones, the white ones, the ones with the highest income, the ones living in the South Region and in smaller municipalities, which also contributes to the results found in the study[12]. It was found that 92.4% of the pregnant women's booklets had records, what shows that those booklets expands the role of the pregnant women's card, as it includes a set of guidelines and procedures of great importance in prenatal care[13].

With regard to the second indicator, to contemplate the proportion of pregnant women with syphilis and HIV tests, all units mentioned guiding pregnant women regarding ISTs, and 90.7% of them offer rapid tests at the unit.

The review of literature[13] shows the percentage of municipalities with a reduction in vertical transmission of sexually transmitted infections during prenatal care, being the Midwest, South and North regions of the country the three regions in which the study showed a greater offer of rapid tests and making of diagnosis.

Thus, prenatal monitoring constitutes a valuable tool for the development of a healthy and complication-free pregnancy, in this context, the actions of tracking, prevention and treatment of Sexually Transmitted Infections (ISTs). Moreover, health education and disease prevention actions constitute a prominent place among activities to fight against syphilis and other STIs14.

Nevertheless, regarding the diagnosis of syphilis in pregnant women according to gestational age in the different Brazilian regions, in the year 2017, it is noted that the diagnosis in the first trimester occurred in a greater proportion in the South region (47.7%), with a lower proportion in the regions Southeast (47.5%), Northeast (27.6%) and North (25.3%). The present study shows that 72.7% of pregnant women who presented syphilis during pregnancy were diagnosed with the infection during prenatal care[15].

The pregnant women´s oral health promotion is considered an important part of the Women's Health Care Program, according to the Guidelines of the National Oral Health Policy[16]. The belief that dental treatment during pregnancy harms the development of the fetus is still part of the culture of some women and that makes it difficult to take care of oral health during pregnancy[17].

Pregnancy alone will not cause tooth decays and periodontal diseases, but hormonal and behavioral changes may contribute to worsen existing infections[18]. Dental prenatal care is so necessary that it has become one of the required indicators in the *Previne Brasil* program. The present study found that most units (77.7%) have ESF and USB teams, however, some,

unfortunately, still do not have Oral Health teams linked to them[19] in agreement with the literature[20]. As an impediment to the implementation of oral health teams, there are the high costs arising from the purchase of materials, instruments and equipment which are essential for dental care, even considering primary care.

Regarding the way in which the pregnant women are referred, the study observed that in most cases the referral to prenatal dental care is made via telephone. The use of the telephone to schedule appointments maximizes appointments, corroborating a study[21] in which it was shown that the main reasons for users not attending scheduled appointments are the inopportune times when they are scheduled, lack and/or failure of communication between patient and health unit, appointments scheduled weeks or months in advance and the difficulty of access to the health service. Thus increasing user satisfaction regarding access to APS services, as it depends on them finding the most appropriate time in their agenda to schedule the service[22].

In Brazil, cervical cancer is the second most diagnosed neoplasm in women, which is why CC (CCU) is seen as an important public health problem in the country. This type of cancer can be detected and treated early by doing cytopathological examination, also known as preventive or Pap smear test[23].

The study showed that more than 95% of the units collect the Pap smear test, which demonstrates the preparation of primary care in terms of supplies, locations and trained professionals to offer the test. Opposite to what the literature says, suggesting that the lack of materials necessary for the collection of the preventive exam also appears as a barrier to the access to the exams, since they are not always present in all UBS[24].

With reference to the demand on the part of women who are eligible to undergo the examination but who did not attend the unit, despite most teams carrying out the search, this percentage should be increased. That demand is extremely important since, as the literature says, this disease has a 100% chance of being cured, and can be treated on an outpatient basis in about 80% of the cases when diagnosed and treated early, which represents , therefore, a great improvement in the women's survival and quality of life[25]. In addition, the active demand on the part of women creates a bond and increases women's adherence to the test, according to a study in which the intervention led to the strengthening of professional relationships between the team and the community, culminating in the improvement of the adherence and the quality of coverage of Pap smear test[26].

The number of teams that have a record of the women who are eligible for Pap smear tests proved to be unsatisfactory, what needs attention, since the monitoring of these women is considered essential considering that early treatment interrupts the evolution of the disease, which will contribute to the reduction of the incidence and mortality of cervical cancer in Brazil[27]. The vaccination process in the national territory is operationalized by the National Immunization Program (in Brazil, PNI), which was structured on September 18, 1973, with the purpose of reducing morbimortality due to diseases which can be preventable by immunization, applying strategies to strengthen surveillance, promotion, protection and health prevention actions[28].

The practice of vaccination enables the eradication of vaccine-preventable diseases and is one of the most cost-effective and safe health interventions, being a strategic component of health programs[29].

Primary Health Care (APS) has as its priority the prevention of child morbidity through immunization with compliance with the calendar for vaccination recommended by the National Immunization Program (PNI)[30].

Vaccination has also an important contribution to achieve the Sustainable Development Objectives (in Brazil, ODS), which among its objectives seeks to ensure a healthy life and promote well-being for all, at all ages[31].

In a systematic review carried out by Tauil et al.[32], regarding the factors that influence adherence to the childhood vaccination schedule for children aged zero to 24 months in several countries, it was found that, in general, the higher birth order , low maternal education and low socioeconomic status were the most frequently observed factors that influence adherence to the childhood vaccination schedule in different countries. Strengthening contacts and relationships between health services and mothers with several children and families with low educational level or low socioeconomic status seem to be an important action to improve vaccination coverage.

Poliomyelitis is a highly infectious disease caused by a virus transmitted from person to person by the fecal-oral route, which multiplies in the intestine with the ability to migrate to the nervous system, causing a sudden condition of flaccid paralysis. There are currently two endemic countries with circulating poliomyelitis virus, Pakistan and Afghanistan[32]. Given this scenario, while the polio virus is not globally eradicated, immunization actions must be reinforced, even in countries with eradication certificates, to avoid a resurgence of Polio[32].

Considering PNI recommendations[32] , the administration of the inactivated Poliomyelitis vaccine (VIP) should be done in 3 doses: 1 (one) dose at 2 months, 1 (one) dose at 4 months and 1 (one) dose at 6 months. Children from 2 months to 4 years, 11 months and 29 days, without vaccination proof, should receive VIP in 3 (three) doses with an interval of 60 days between doses, or a minimum of 30 days[33].

The combined diphtheria-tetanus-pertussis-Haemophilus influenzae type b (DTP/Hib) vaccine allows for a reduction in the number of injections required, thus improving compliance with the vaccination schedule and greater vaccination coverage. Besides, the combined vaccine reduced logistical costs related to factors such as number of visits to health centers, number of syringes and needles needed, and required storage space[34]. Pentavalent vaccines (a combination vaccine that protects against five killer diseases: diphtheria, pertussis, tetanus, hepatitis B and Hib) were rolled out in 65 out of the 67 GAVI eligible countries through 2011. Pentavalent vaccines offer a golden opportunity to contain Hib and hepatitis B diseases along with diphtheria, pertussis and tetanus in developing countries[35].

The Pentavalent vaccine is the union of the Tetravalent vaccine + hepatitis B, it was included in the vaccination calendar in 2012 and its purpose is to immunize against five diseases: Diphtheria, Tetanus, Pertussis, Infections caused by Haemophilus Influenzae type b, and Hepatitis B. It is worth mentioning that low vaccination coverage may lead to an increase in the number of cases and outbreaks[36].

Before the implementation of haemophilus influenzae type b (Hib) conjugate vaccination programs in the 1990s, Hib was the most common cause of bacterial meningitis in children aged <5 years old. Although the burden of all Hib disease has significantly decreased in the post-vaccination era, Hib still accounted for >29,000 deaths worldwide in children aged <5 years old in 2015[37].

Until the beginning of 2019, 191(a hundred ninety-one) countries had introduced Hib vaccination into their national immunization programs (PNIs), and global immunization coverage with three doses of Hib vaccine was estimated at 72% in 2018. However, immunization coverage varies greatly by region and

country (up to 23% for the Western Pacific Region and up to 87% in the Americas and Southeast Asia in 2018)[38], and the burden of Hib disease remains considerable in countries with low adherence to vaccines. Moreover, even in countries with high vaccination coverage, outbreaks continue to occur sporadically[38]. Therefore, there is still a need for continued surveillance and reassessment of vaccination strategies to ensure progress in eradicating the disease.

Considering vaccination as a preventive service, in principle, it is up to the user to seek this service when and if they consider it a health need[39]. Therefore, despite the vaccination service depends on factors related to the user, such as health need or even demographic, socioeconomic or cultural characteristics, there must be considered the importance of factors related to the "barrier system" which exists in accessing the service, such as characteristics of service providers and service organization[40].

The users' reasons for non-adherence to vaccination can often be individual, complex and subjective, making it difficult for managers or health professionals to modify them. Thus, it is necessary to identify the factors related to the structuring and organization of services which, if improved by managers or professionals, can act positively on vaccination coverage indicators[41].

Regarding the data presented in table 4, it is observed that 95.5% of the UBSs reported having records of users presenting Diabetes Mellitus (DM), but those results differ from the ones found by Radigonda et al.[42], where only 4.4% of the 386 (three hundred eight-six) participants , had records of people presenting DM. Regarding the active search for patients, 58.6%, that is, 17 UBSs, carry out this procedure, a result that differs from those found by Radigonda et al.[41], since only 12.3% of patients received home visit, what is in line with what was observed by Bortoluz, Lima & Nedel[43], where 10.9% of users presenting Systemic Arterial Hypertension (HAS) and Diabetes Mellitus (DM) reported having received a home visit in the last month.

By analyzing the doctor`s appointments, only 29.7% of the units reported carrying out the offer for patients diagnosed with diabetes and 47.6%, that is, ten units, reported carrying out the offer according to the programmed risk for DM. The results are according to those observed in other studies, where only 35.3% of patient had attended a doctor`s appointment in the last twelve months, 22% reported having had a doctor`s appointment in the last six months, and only 24% reported being monitored regularly by a nurse[42,43].

Therefore, in view of the results analyzed in Table 4, the present research showed regular coverage in monitoring people presenting DM and HAS, because even though 92.4% and 95.5% of the units showed records of people diagnosed with HAS and DM, respectively, only 50% and 47.6% scheduled doctor`s appointments according to their risk for these pathologies. Such results suggest difficulties in the monitoring and comprehensive care of patients with these comorbidities within the scope of Primary Health Care (APS).

In this sense, in view of these issues, it is essential to plan and execute health actions and strategies, aimed at fully guaranteeing the health demands of individuals and collectivities that are enrolled in the territories of each UBS, aiming at fulfilling the essential attributes of the PHC, and consequently, reducing the search for secondary and tertiary care services in the network44,45,46.

In this regard, in the face of these issues, it is essential to plan and execute health actions and strategies, aiming at fully guaranteeing the health demands of individuals and communities that are enrolled in the territories of each UBS, in order to meet the essential attributes of the APS, and consequently, reducing the search

for secondary and tertiary care services in the network[44,45,46].

## Conclusion

Considering the indicators established by the *Previne Brasil* Program in order to conduct the health situation analysis in the health units in the municipality of Criciúma/SC, it is understood that most of the units participating in the research complied with the seven program indicators. This can be observed from the effective monitoring of pregnant women, vaccination campaigns and the recording of people diagnosed with HAS and DM, procedures carried out by most UBSs. Nevertheless, the study observed that the health service in the municipality are still in process of adapting to the new health indicators, especially regarding availability and adherence to the Hib vaccine (Haemophilus influenzae vaccine).

According to the results, it is worth noting the preparation of the APS in relation to the population's health needs, given that the majority of them offer quality care, focused on the main demands of the territories. It is also worth mentioning, however, the need to expand the active search for DCNT cases, aiming at a greater bond between the APS and users, in order to guarantee greater adherence to treatment, greater coverage and assistance.

In light of the above, the importance of knowing the health status of individuals and communities is evident. It is also noteworthy that providing comprehensive and continuous healthcare enables APS to comply with its objective of solving the main health problems found in the population, reducing the search for medium and high complexity services, based on the elaboration of health education actions and strategies, and creating a link between professionals, users and the community.

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