

# Teleconsultations in support of Primary Health Care (PHC): challenges for sustainability

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## Abstract

**Introduction:** Telehealth has been consolidated as an important strategy for qualifying Primary Health Care (PHC) in the context of the Unified Health System. Remote Consultation, as a possibility of supporting professionals in service, can support decision-making, in order to qualify management in PHC and safe referral to the secondary level of care, when necessary. **Objective:** The purpose of this article is to report on the experience of the UFSC Telehealth Center in Remote Consultation. **Methodology:** This is a qualitative experience report on the description and analysis of the provision of Remote Consultation services in support of PHC. **Results:** The Telehealth Center of the Universidade Federal de Santa Catarina (Telessaúde UFSC), in partnership with regulatory centers in the state, has used Remote Consultation as a step-in referral flows from PHC to other levels of care. There are eight years of experience, more than 200 thousand cases discussed with an average potential of 40% reduction in referrals after the support of a specialist teleconsultant. **Discussion:** Since the implementation of the flows, doctors have been the main requesters of Remote Consultation, with more than 90% satisfaction. The sustainability of the Remote Consultation offer is guaranteed with the inclusion of specialist teleconsultants who work linked to the regulatory centers that partner with Telessaúde UFSC. **Conclusion:** This strategy guarantees the continuity, even if partial, of the service in the event of discontinuation of funding from the Ministry of Health.

**Key-words:** Telehealth, Remote Consultation, Unified Health System, Primary Health Care.

## Resumen

**Teleconsultas en apoyo a la Atención Básica de Salud (ABS): desafíos para la sostenibilidad**

**Introducción:** La Telesalud se ha consolidado como una importante estrategia de calificación de la Atención Primaria de Salud (APS) en el contexto del Sistema Único de Salud. La consulta remota, como posibilidad de apoyo a los profesionales en servicio, tiene capacidad de apoyar la toma de decisiones, con el fin de calificar la gestión en la APS y derivación segura al segundo nivel de atención, cuando sea necesario. **Objetivo:** El propósito de este artículo es informar sobre la experiencia del Centro de Telesalud de la UFSC en consulta remota. **Metodología:** Este es un informe de experiencia cualitativa sobre la descripción y el análisis de la oferta de los servicios de consulta remota en apoyo a la APS. **Resultados:** El Centro de Telesalud de la Universidade Federal de Santa Catarina (Telessaúde UFSC), en colaboración con centros reguladores del estado, utilizó la consulta remota como paso en los flujos de derivación de la APS para otros niveles de atención. Son ocho años de experiencia, más de 200 mil casos tratados con un potencial promedio de reducción del 40% en derivaciones tras el apoyo de un teleconsultor especialista. **Discusión:** Desde la implementación de los flujos, los médicos son los principales solicitantes de consulta remota, con más del 90% de satisfacción. La sostenibilidad de la oferta de consulta remota está garantizada con la inclusión de teleconsultores especializados que actúan vinculados a los centros reguladores asociados con Telessaúde UFSC. **Conclusión:** Esta estrategia garantiza la continuidad, aunque sea parcial, del servicio en caso de interrupción del financiamiento del Ministerio de Salud.

**Palabras clave:** Telesalud, Consulta Remota, Sistema Único de Salud, Atención Primaria de Salud.

**Teleconsultorias no apoio à Atenção Básica à Saúde (ABS): desafios para a sustentabilidade**

**Introdução:** Telessaúde tem se consolidado como importante estratégia para qualificação da Atenção Básica à Saúde (ABS) no contexto do Sistema Único de Saúde. A Teleconsultoria, como possibilidade de apoio aos profissionais em serviço, tem capacidade de subsidiar a tomada de decisão, de forma a qualificar o manejo na ABS e o encaminhamento seguro ao nível secundário de atenção, quando necessário. **Objetivo:** Relatar a experiência do Núcleo Telessaúde UFSC em teleconsultorias. **Metodologia:** Trata-se de um relato de experiência de abordagem qualitativa, desenvolvido a partir da descrição e análise da oferta de teleconsultorias para apoio à ABS. **Resultados:** O Núcleo Telessaúde da Universidade Federal de Santa Catarina (Telessaúde UFSC), em parceria com centrais de regulação no estado, tem utilizado as teleconsultorias como etapa em fluxos de encaminhamento da ABS para outros níveis de atenção. São oito anos de experiência, mais de 200 mil casos discutidos com potencial médio de 40% de redução dos encaminhamentos após o apoio do teleconsultor especialista. **Discussão:** Desde a implantação dos fluxos, os médicos são os principais solicitantes de teleconsultorias, com mais de 90% de satisfação. A sustentabilidade da oferta de teleconsultorias é garantida com a inclusão de teleconsultores especialistas que atuam vinculados às centrais de regulação parceiras do Telessaúde UFSC. **Conclusão:** Essa estratégia garante a continuidade, mesmo que parcial, do serviço em caso de descontinuidade do financiamento do Ministério da Saúde.

**Palavras-chave:** Telessaúde, Teleconsultoria, Sistema Único de Saúde, Atenção Básica à Saúde.

## INTRODUCTION

Telehealth within the Unified Health System (*SUS-Sistema Único de Saúde*) emerged as an intersectoral project, conceived by the Ministries of Health, Education, Science and Technology, and Communication and Defense, having the National Policies for Continuing Education in Health (*PNEPS - Políticas Nacionais de Educação Permanente em Saúde*) and Primary Care (*PNAB - Políticas Nacionais de Atenção Básica*) as epistemological bases<sup>1</sup>. The National Telehealth Program was established by Ordinance GM/MS number 35/2007, to support the work of health professionals and respond to their demands at work for changes in practices<sup>2</sup>. In 2011, after the implementation period, Ordinance GM/MS number 2,546 redefined and expanded the Program, which became known as the National Telehealth Brazil Networks Program (Telessaúde Brasil Redes), to support the consolidation of the Health Care Networks organized by Primary Health Care (PHC) within the scope of *SUS*<sup>3</sup>.

One of the Telehealth Pilot Project Centers (*Núcleo do Projeto Piloto de Telessaúde*) was implemented in Santa Catarina (SC) in 2007, under the coordination of the Federal University of Santa Catarina (UFSC), in partnership with the State Department of Health (SES/SC). The UFSC Telehealth Center (*Telessaúde UFSC*) began its operations initially offering the Second Formative Opinion and Tele-education, later incorporating Telediagnosis and, in 2013, already offering the four proposed service modalities: Teleconsultations, Telediagnosis, Tele-Education and Second Formative Opinion<sup>3,4,5</sup>. Currently, Telessaúde UFSC reaches 100% of the municipalities of SC and is available to all states of Brazil, reaching 2,230 points in 2022, through Teleconsulting, National Offer of Telediagnosis, and Tele-education services, with access varying between States depending on the service observed<sup>3,6,7</sup>.

Regarding teleconsultations, the *Telessaúde UFSC* service has been offered at different stages. Between 2009 and 2012, requests came from professionals linked to the Family Health Strategy teams registered on the Center's platform, spontaneously, and were forwarded to specialists who supported them in their clinical conduct. Between 2013 and 2014, requests for support in organizing teamwork processes were used as a

systematic support strategy by SES/SC to teams that joined the National Program for Improving Access and Quality in Primary Care (*PMAQ-AB-Programa Nacional de Melhoria do Acesso e da Qualidade na Atenção Básica*), and the number of teleconsultations increased significantly. In 2013, considering the proposal to enhance PHC, Telessaúde UFSC also began to work with Regulatory Centers in the state of SC to establish partnerships and coordinate support in access flows to specialized care<sup>4,5,8</sup>.

Understanding the potential of the service offered and the incentive to improve the support offered, the Center began to invest in building the role of consultation between professionals (teleconsulting) to contribute to greater resolution in the PHC, through strengthening professionals for critical and conscious decision-making, and qualifying access to secondary care, through safe and qualified management of cases<sup>6,8</sup>, in line with Technical Note number 50/2015-DEGES/SGTES/MS, 2015, which specified the role of Telehealth Centers and teleconsulting, to promote articulation between PHC and Secondary Care<sup>7</sup>.

Thus, based on the relevance of teleconsultations as telehealth actions for healthcare support<sup>9</sup>, this work aims to report the experience of the UFSC Telehealth Center regarding the provision of teleconsultations in partnership with Regulatory Centers in the state of Santa Catarina, which began in 2015, presenting an analysis of the power and needs in this process towards its stipulated role of increasing resolvability in the PHC, managing waiting lists, supporting the implementation of clinical and access protocols, offering teleconsultations integrated with regulatory centers in priority specialties, with high pent-up demand and reasons for referral that are sensitive to management in the PHC<sup>7</sup>.

## METHOD

This is a qualitative experience report that describes the experience resulting from the provision of teleconsultations by *Telessaúde UFSC*, between

2015 and 2022, for the qualification and strengthening of PHC in Santa Catarina.

The report was based on the description and analysis of the characteristics of the service provision, using secondary data from the Telemedicine and Telehealth System (*STT- Sistema de Telemedicina e Telessaúde*), an information system through which the Center offers and stores all data on the history of service production.

The temporal evolution and characteristics of the service offering were considered, with emphasis on the articulation of the Center with Municipal Regulatory Centers and the State Health Department and the importance of the organization for the sustainability of the service.

## RESULTS

### Flow description

To access the Teleconsultation service, healthcare professionals must be registered with the STT. Eligibility to request teleconsultation is done when the professional registers with the STT.

Currently, *Telessaúde UFSC* offers three types of teleconsultations: 1) Cases for referrals: these are teleconsultations with the potential for referral to a specialty within the flows agreed upon with the regulatory centers; 2) General clinical questions: these refer to teleconsultations to support the management of clinical cases, answered by specialists and family and community doctors; 3) Questions about the work process, coordination, and management of the SUS.

The system offers a new possibility, not implemented until 2023: Clinical Questions regarding Judicialization. These teleconsultations will be used to request clinical opinions on different specialties, considering evidence-based health, in cases where the state is legally required to provide health products (medicines, nutrition, supplies, and procedures).

In the teleconsultation flow, the question is forwarded to the responsible teleconsultant. This forwarding - called teleregulation - can be done automatically - when it concerns the flows previously agreed with the regulation centers, whether of referral doubt or clinical doubt or by manual teleregulation. Manual teleregulation is carried out by a professional from the UFSC Telehealth Center, who mainly calls on medical teleconsultants, specialists in Family and Community Medicine, nurses, pharmacists, and dentists.

Upon receiving teleconsultations, teleconsultants are notified by email and are instructed to prepare their response within 72 hours. Responses must follow a minimum standard of desirable and expected information, concluding with guidance for referral to the specialist, indicating the risk classification, suggesting exams and conduct according to the case; or, guidance for managing the case in the PHC, based on the guidance provided.

To be qualified as teleconsultants, professionals must first complete a training course designed and made available by the Telehealth UFSC Teleeducation team, with a workload of 20 hours. The course is online and self-instructional, available within the virtual platform called *Moodle*, of *Telessaúde UFSC*.

The teleconsultation response read by the professional who requested it aims to qualify the management of the case in the PC, considering that the user may be managed in the Basic Health Unit or be referred to the secondary level of health care. In this case, teleconsultation qualifies the process of regulating user access to the care network, as it will be accessed by regulators who work in municipal or state regulatory centers and schedule appointments based on identified needs, with equity.

The teleconsultations answered can be evaluated by the professionals who requested them and are also evaluated by a team from the Center that monitors and evaluates the responses given by the teleconsultants in time frames. The results of the evaluations are used to qualify the teleconsultant team, and the team in general and to improve processes.

In the last ten years, the number of teleconsultations has increased significantly, expanding support for professionals working in the PHC (figure 1).

Another result of teleconsultations is the Second Formative Opinion (*SOF- Segunda Opinião Formativa*). *Telessaúde UFSC* has already produced more than 175 SOFs, between 2008 and 2023. SOFs are evidence-based questions and answers that are published on the Virtual Health Library (*BVS-Biblioteca Virtual em Saúde*) page.

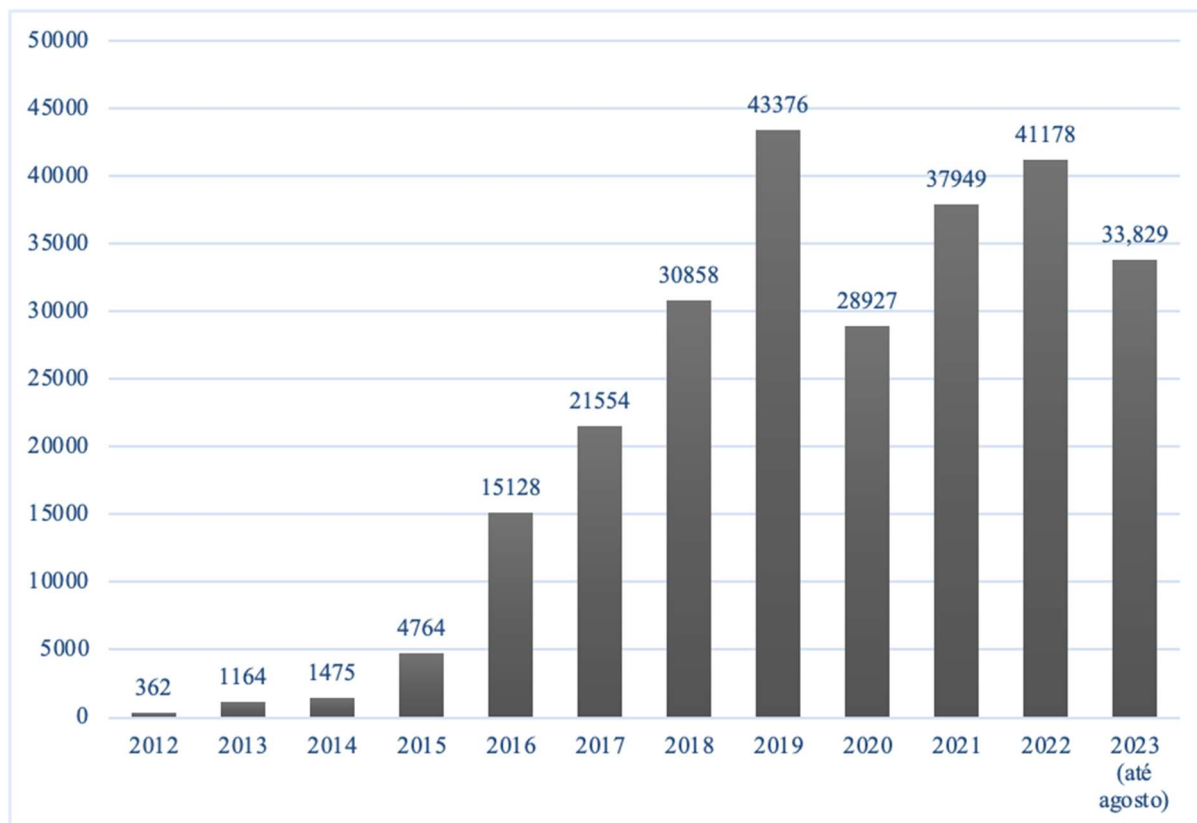
### Temporal evolution

Over its 15-year history, *Telessaúde UFSC* has been impacting Primary Health Care (PHC) and the construction of Health Care Networks (*RAS- Redes de Atenção à Saúde*), contributing to their strengthening and qualification. When it began its history, the Center reached 100 municipalities, supporting team professionals and responding to less than 30 teleconsultations per month.

In December 2022, the offer reached 2,920 professionals, from 1,465 teams, distributed in 320 Brazilian municipalities, most of them in Santa Catarina. In 2022, an average of 3,417 teleconsultations were carried out per month, demonstrating the power of teleconsultations as a tool for Continuing Education in Health (*EPS- Redes de Atenção à Saúde*) and of Telehealth in articulating with the network.

Figure 2 shows the active flows of teleconsultations offered in July 2023. The partnerships established with municipal regulatory centers are located in municipalities in the coastal region of Santa Catarina, except for one municipality in the interior of the state. As an extension project, *Telessaúde UFSC* does not have the guarantee of continued funding to cover the services offered. In 2020, the project was without funding for 18 months and the work could only be maintained because the teleconsultants linked to the partner regulatory centers continued to work.

**Figure 1** – Total number of teleconsultations carried out by the UFSC Telehealth Center until August 2023, Santa Catarina, 2023.



Source: Telessaúde UFSC (2023).

### Description of the current SC telehealth strategy

*Telessaúde UFSC* is linked to the UFSC Department of Public Health and is coordinated by the University, through a professor who has passed a public exam. The Center is funded by the Ministry of Health and the resource is managed by the Foundation for Support to Research and University Extension (*FAPEU- Fundação de Amparo à Pesquisa e Extensão Universitária*), which executes the hiring and payments together with the project coordinator. The services offered are guided by regulations of the Ministry of Health and the offer is made in partnership with SES/SC and municipalities of Santa Catarina.

Regarding teleconsultations, the largest amount of support offered is related to the discussion of cases between medical professionals from the PHC medical teleconsultants, and focal specialists.

Table 1 shows the characterization of the teleconsultations carried out by the Center during one year:

**Table 1** – Description of teleconsultations requested in 2022 according to characterization variables. Santa Catarina, 2023

| Characterization variables                            | n (%)                |
|---|----------------------|
| <b>Total</b>  | <b>41,178 (100%)</b> |
| <b>Type of teleconsultation</b>                       |                      |
| Forwarding flows                                      | 37,184 (90.3%)       |
| Clinical questions                                    | 3,965 (9.6%)         |
| Work Process  | 29 (0.1%)            |
| <b>Requesting professional categories</b>             |                      |
| Doctors   | 41,147 (99.9%)       |
| Other higher education professionals                  | 31 (0.1%)            |
| <b>Specific Guidance</b>                              |                      |
| ABS Management  | 16,064 (39.0%)       |
| Referral to specialties                               | 22,232 (54.0%)       |
| Incomplete teleconsultations                          | 2,882 (7.0%)         |
| <b>Partner Regulatory Centers and UFSC Telehealth</b> |                      |
| Balneário Camboriú                                    | 2,091 (5.1%)         |
| Caçador   | 20 (≈0.1%)           |
| Itajaí  | 8,367 (20.3%)        |
| Joinville   | 7,516 (18.3%)        |
| Palhoça   | 704 (1.7%)           |
| São José  | 5,445 (13.2%)        |
| SES/SC  | 15,150 (36.8%)       |
| Núcleo Telessaúde UFSC                                | 1,377 (3.3%)         |

Source: Telessaúde UFSC (2023) - Translated.

**Figure 2** – Active flows of teleconsultations carried out by the UFSC Telehealth Center in August 2023. Santa Catarina, 2023

## Active Teleconsultation Flows

### UFSC Telehealth Center

**Consultative:**  
Family and Community Medicine;  
Pediatrics.

#### SES/SC

**Consultative:**

- Dermatology – Leprosy;
- Tuberculosis;
- Adult Pulmonology;
- Children's Pulmonology;
- Adult Orthopedics;
- Children's Orthopedics;
- Dengue;
- STI – HIV;
- STI – Hepatitis B and C;
- STI – Syphilis;
- Sexual Violence.

**Compulsory:**

- Endocrinology;
- Hematology;
- Obstetrics – high risk (for Greater Florianópolis and Serra Catarinense);
- Nephrology CKD.

#### a) Caçador

**Compulsory:**

- Endocrinology.

#### b) Joinville

**Compulsory:**

- Cardiology;
- Endocrinology;
- Orthopedics;
- Adult Psychiatry;
- Child psychiatry.

#### c) Itajaí

**Compulsory:**

- Allergy and Immunology;
- Cardiology;
- Pediatric endocrinology;
- Complex Wounds;
- Adult Neurology;
- Orthopedics;
- Proctology;
- Bums;
- Rheumatology;
- Adult urology.

#### d) Balneário Camboriú

**Compulsory:**

- Angiology;
- Cardiology;
- General Surgery;
- Endocrinology;
- Gastroenterology;
- Gynecology;
- Neurology;
- Orthopedics;
- Otorhinolaryngology;
- Rheumatology.

#### e) São José

**Compulsory:**

- Cardiology;
- Endocrinology;
- Orthopedics;
- Rheumatology;
- Urology.

#### f) Florianópolis

**Consultative:**

- Acupuncture;
- Bucmaxillo (Oral Health);
- Cardiology;
- Endocrinology;
- Pediatric endocrinology;
- Stomatology;
- Endodontics (Oral Health);
- Geriatrics;
- Hematology;
- Mastology;
- Neurology;
- Periodontics (Oral Health);
- PNE (Oral Health);
- Prosthetics (Oral Health);
- Radiology (Oral Health);
- Pediatric Dentistry;
- Pediatrics;
- Pulmonology;
- Psychology;
- Psychiatry;
- Child Psychiatry;
- Rheumatology;
- Social Work.

#### g) Palhoça

**Compulsory:**

- Endocrinology;
- Cardiology.



Source: Prepared by the authors based on data from *Telessaúde UFSC* (2023) - Translated.

The UFSC Telehealth Center maintains an active relationship with 5 teleconsultants. All others (n=180) are professionals linked to regulatory centers (state and municipal) and who dedicate part of their work hours as doctors in the specialties to respond to teleconsultations and support the qualified management of cases.

When a teleconsultation is requested to refer a user to a specialist, the response must include: 1) an objective answer to the requester's question; 2) the conduct guidelines to be implemented in the case - considering the most current references; and 3) if referral to an in-person consultation with a focal specialist is indicated, the teleconsultant must indicate the risk classification for prioritizing care, suggest exams before care and other necessary and possible procedures to be performed in the PHC<sup>6</sup>.

## DISCUSSION

The benefits of telehealth are already widely discussed, and the pandemic has brought to the Brazilian scenario the need to broaden our focus on regulations for quality in remote interaction and the use of resources<sup>10,11</sup>. In the case of Telessaúde UFSC, around 40% of cases suggest management in the PHC among the teleconsultations carried out to refer patients for in-person consultations in various specialties, without the need for in-person care by a specialist physician (Table 1). In 2022, this number represented more than 16,000 users who had their needs met at the UBS without the need to travel for specialized care.

The counterpart offered by the State Health Departments and partner municipalities, providing hours of specialist assistance for the performance of teleconsultations, provides sustainability for the Teleconsultation service in Santa Catarina, as it enables the work of so many qualified professionals in the construction of answers to questions arising from the PHC. In addition to the quality of the support offered, the number of teleconsultations performed is optimized. This coordination was established as necessary for the operation of the service in 2015, by the National Telehealth Brazil Networks Program (*Programa Nacional Telessaúde Brasil Redes*)<sup>7</sup>.

Studies suggest that the sustainability of telehealth also requires clear regulations, the appreciation of the PHC and professionals to maintain team training<sup>12</sup> and the proximity of telehealth centers to professionals in services<sup>13</sup>.

Out of every 10 referral intentions, approximately 4 were avoided, with an indication of safe management in the PHC. The other 6 teleconsultations, in addition to having the referral confirmed, throughout the entire process, also received:

- guidance on managing the case in the PHC until the in-person consultation with the specialist;
- risk classification by the specialist for consideration by the SUS regulator;
- suggestion of exams for the first consultation with a specialist, making it more qualified.

By suggesting management in the PHC with behavior-oriented support and by suggesting referral, indicating risk, necessary exams, and behaviors to be implemented until the in-person consultation with a specialist, teleconsultation has a potential impact on waiting lists for care and contributes to safe and equitable referral.

Other locations have been using regulatory strategies with the participation of telehealth tools. Rio Grande do Sul<sup>14</sup>, for example, has seen reductions in waiting lists for secondary care appointments of up to 75% in 4 years. The work is carried out by doctors from TelessaúdeRS-URGS and the State Regulatory Complex, which can result in scheduling an appointment for the requested specialty, or the patient can be seen by the requesting doctor in their municipality with diagnosis and/or management aided by Telehealth. Local protocols and teleconducts are created or adapted and are widely available<sup>15</sup>.

*Regula Mais Brasil*<sup>16</sup>, a *PROADI-SUS* project carried out from 2018 to 2022, supported doctors working in Basic Health Units (BHU) and local regulatory complexes through Telehealth, guiding the regulation of queues for consultations in Secondary Health Care. It brought reductions in waiting times for consultations with secondary care specialists in Porto Alegre, Belo Horizonte, Distrito Federal, and Amazonas, with more than 300 thousand cases regulated, prioritization of the most serious cases, and working on the qualification of Basic Health Units professionals for the local resolution of PHC-sensitive conditions.

Coutinho<sup>17</sup>, reports on the work of Telehealth in training professionals and regulating colonoscopy exams in Natal, RN. The scheduling process is initiated by the requesting physician, and evaluated by the Regulatory Physician, a member of Telehealth. Once approved, the appointment is accessed by the Regulation Center of the Municipal Health Department (SMS) of Natal to schedule the exam, according to the availability of vacancies. Then, a professional from the BHU views the regulated and scheduled exams and can contact the user. For exams that were not scheduled, Telehealth sends management assistance to the PHC, assisting in the ongoing education of professionals.

These experiences, together with *Telessaúde UFSC*, signal to us the importance of advancing the proposal for telehealth and regulation. In the case of *Telessaúde UFSC*, the significant demand for established teleconsultation flows demonstrates the reach and structuring of a network that has been built by the efforts of strategic actors in the context of state and municipal health departments. The installed capacity at *Telessaúde UFSC* is currently widely used, unlike what has been identified at other times and what happens in other services<sup>12,13</sup>. The agreement on the use of services in Regional and Bipartite Intermanagerial Committees (*CIR and CIB-Comissões Intergestores Regionais e Bipartite*) demonstrates the service's view of the use of telehealth.

## CONCLUSION

The work of Telessaúde UFSC, as well as other initiatives, signals its potential as a tool for facilitating and qualifying Regulation, in addition to identifying repressed demands. In this process, protocols are constantly updated and revised, contributing to updated clinical practices and we were able to highlight the number of user displacements that are avoided by the interaction of the PHC with the specialist professional through teleconsultation.

The PHC is the space that meets most of the population's needs, and the complexity of the demands becomes evident when we analyze the number of teleconsultations received by teleconsultants. Strengthening the national policy on Telehealth and long-term financing methods is desirable for the advancement of services and a greater contribution to strengthening the SUS.

In a global context of increasing the value of telehealth, with evidence of its potential for improving healthcare and training human resources, the discussion of the Program's sustainability within the SUS becomes increasingly urgent, so that the investment priority is not weakened by temporary management changes..

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