

# Comparison between indication for referrals of the teleconsultant and the family health doctor: the Betim, Minas Gerais case

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## Abstract

*Introduction: The article compares the behavior indicated by teleconsultants about keeping the patient in the unit with the vision of the family health doctor after teleconsulting in the city of Betim, Minas Gerais, in a context in which physicians are satisfied with teleconsulting. Method: A cross-sectional study with a descriptive and analytical approach of 1157 teleconsultations carried out by family health doctors from May 2017 to May 2018. Results: PSF physicians are satisfied with teleconsultory responses, with 94.5 % being between satisfied and very satisfied. Regarding the conduct suggested by the teleconsultant in general, 73.9% of teleconsultants carried out, the teleconsultants suggest that the patients stay in the unit itself with variation among the specialties. As for the conduct of family health doctors, 44% intend to keep the patient in the unit after the teleconsulting also takes place with variation between the different specialties. Other parameters had also been analyzed. Conclusion: Teleconsultants have a good evaluation by the family health physicians, however, there are disagreements regarding the maintenance of the patient in the unit or not, indicating a difficult situation in the process of incorporating telehealth in the realities of care.*

**Keywords:** Telemedicine; Evaluation of Health Services; Teleconsulting; Family Health Teams.

## Resumen

*Comparación entre la indicación para encaminamientos del teleconsultor y del médico de salud de la familia: el caso de Betim, Minas Gerais.*

*Introducción: El artículo compara la conducta indicada por los teleconsultores sobre mantener al paciente en la unidad con la visión del médico de salud de la familia, después de la realización de teleconsultorias, en el municipio de Betim, Minas Gerais, en un contexto en el cual los médicos están satisfechos con la realización de teleconsultorias. Método: Estudio transversal, con abordaje descriptivo y analítico de 1157 teleconsultorias realizadas por médicos de salud de la familia, en el periodo de mayo de 2017 a mayo de 2018. Resultados: Los médicos del PSF están satisfechos con las respuestas de las teleconsultorias, con 94,5 % se sitúan entre satisfechos y muy satisfechos. En cuanto a la conducta sugerida por el teleconsultor en general, el 73,9% de las teleconsultorias realizadas, los teleconsultores sugieren que los pacientes queden en la propia unidad con variación entre las especialidades. En cuanto a la conducta de los médicos de salud de la familia, el 44% pretenden mantener al paciente en la unidad después de la realización de las teleconsultorias también con variación entre las diversas especialidades. Otros parámetros también se analizaron. Conclusión: Las teleconsultorias poseen una buena evaluación por parte de los médicos de salud de la familia entretanto hay divergencias en cuanto al mantenimiento del paciente en la unidad o no, apuntando una situación de dificultad en el proceso de incorporación de telesalud en las realidades asistenciales.*

**Palabras-clave:** Telemedicina; Evaluación de Servicios de Salud; Teleconsultorias; Equipos de Salud de la Familia.

## Resumo

*Comparação entre indicação para encaminhamentos do teleconsultor e do médico de saúde da família: o caso de Betim, Minas Gerais.*

*Introdução: O artigo compara a conduta indicada pelos teleconsultores sobre manter o paciente na unidade com a visão do médico de saúde da família, após a realização de teleconsultorias, no município de Betim, Minas Gerais, em um contexto no qual os médicos estão satisfeitos com a realização de teleconsultorias. Método: Estudo transversal, com abordagem descritiva e analítica de 1157 teleconsultorias realizadas por médicos de saúde da família, no período de maio de 2017 a maio de 2018. Resultados: Os médicos do PSF estão satisfeitos com as respostas das teleconsultorias, com 94,5% se situando entre satisfeitos e muito satisfeitos. Quanto à conduta sugerida pelo teleconsultor em geral, em 73,9% das teleconsultorias realizadas, os teleconsultores sugerem que os pacientes fiquem na própria unidade com variação entre as especialidades. Quanto à conduta dos médicos de saúde da família, 44% pretendem manter o paciente na unidade após a realização das teleconsultorias também com variação entre as diversas especialidades. Outros parâmetros também foram analisados. Conclusão: As teleconsultorias possuem uma boa avaliação por parte dos médicos de saúde da família, entretanto há divergências quanto a manutenção do paciente na unidade ou não, apontando mais uma situação de dificuldade no processo de incorporação de telessaúde nas realidades assistenciais.*

**Palavras-chave:** Telemedicina; Avaliação de Serviços de Saúde; Teleconsultorias; Equipes de Saúde da Família.

## Introduction

Telehealth's situation around the world is advancing. A OMS<sup>1</sup> study encompassing 70 countries, in 2016, demonstrates the uneven pathway of its development: while in the world 57% of the countries already had a national policy or reference in telehealth, in America this was limited to 36,8%; as for the implementation of teleradiology programs, in the world and in America 754% and 10,5% respectively; telepathology programs, remote monitoring and teledermatology, 50% and 10,5%, respectively; in relation to the evaluation of telehealth actions, the situation is precarious in both situations: 25% and 2%. As for the factors that hinder its implementation, are quoted: absence of ICT infrastructure, funding and regulations; competition between the priorities in the health field and proofs that telehealth work.

In Brazil, however, there is a significantly more expressive use of telehealth resources in the Brazilian public network. A study<sup>2</sup> carried out from the data of the Programa de Melhoria do Acesso e Qualidade (free translation: Improvement of the Access and Quality Program), that applied interviews with 92,5% of the Family Health Teams (ESF) in 2014, notes that 32,7% of these used telehealth resources in a global context in which only 51,1% of the country's health units had internet access. From the proposal of the national program to implement telehealth resources in about 14.450 ESF in the country, more than 9000 teams exist, with telehealth structure and most importantly using these resources already demonstrates the gradual process of the implementation of telehealth projects in Brazil. This process is uneven in the country, with the north and northeast regions using it less; however, the smaller municipalities, with less than 10.000 inhabitants and with worse socioeconomic conditions have an average of 42,3% of use while the national average is 32,7%:

The initial proposal of a project of implementation of telehealth resources involving educational activities and of carrying out teleconsulting and telediagnosis in public area is in full expansion. In an article<sup>3</sup> published in 2016, it was observed that the telehealth program in the Brazilian public network was present in 23 states and, with a total of 8.097 points, assisted 3.417 municipalities. Each state has specificities. The author emphasizes that Minas Gerais attributed emphasis in the implementation of the service of electrocardiogram from afar, due to the importance of cardiovascular diseases in the state's epidemiological profile. In Rio de Janeiro, teleradiology allows common chest radiological exams carried out in primary care services to be digitalized and sent to the evaluation of teleconsultants radiologists. In Rio Grande do Sul telediagnosis for chronic respiratory diseases are carried out with obstetric ultrasonography with the use of telemedicine. Santa Catarina develops a wide exam transmission network, among which are ECG, computed tomography, ultrasound and magnetic resonance. Exams obtained in hospitals from the state interior are rendered by specialist

in collaborator centers. São Paulo, in turn, has stand out in teleeducation, with initiatives such as the Projeto Homem Virtual (free translate: Virtual Man Project), the Projeto Jovem Doutor (free translation: Young Doctor Project), the Projeto Cybertutor (free translation: Cybertutor Project), the Projeto Sala de Aula Interativa do Futuro (free translation: Futuristic Interactive Classroom Project), among others.

In a 2017<sup>4</sup> article, produced by the national coordination of the telehealth project, focusing specifically the national project, it is observed that the project was implemented in 47 telehealth centers, from which 25 were intermunicipal and 22 were state centers. Among these, 46 offered the teleconsulting service, while 15 offered SOF's activity, only 11 offered telediagnosis service and 24 centers offered teleeducation activity. More so, it is noted that 08 centers are in implementation phase. According to this study, in the period of a year – February 2016 until march 2017 – 79.112 teleconsultings were carried out, and the centers that carried out the most teleconsultings were Minas Gerais with 25.604, Santa Catarina with 14.373, Paraná with 12.580, Maranhão with 6.565 and Pernambuco with 3.050.

As for the telediagnosis in the same period 725.037 telediagnosis were carried out. Minas Gerais with 472.703 diagnoses, Santa Catarina with 209.423, Ceará with 2.079, Rio Grande do Sul with 7.048 diagnoses, Pernambuco with 5.760, Goiás with 5.608, Mato Grosso with 3.179 and Espírito Santo with 525. As for the teleeducation activities, in the analyzed period, more than 27.372 participation in teleeducation activities happened.

Many studies<sup>5,6,7,8,9,10</sup> confirm the power of the national project in many areas. In medicine, the areas of cardiology, ophthalmology, dermatology are the ones that stand out the most. The nursing<sup>11</sup> area participates in an active way in the national project with studies determining important modification in its work process. The phonoaudiology<sup>12,13</sup> physiotherapy<sup>14</sup> executes activities in many places. The odontology area already uses this tool for teleeducation a lot and tries to advance with other strategies<sup>15,16</sup>.

Many studies involving teleconsultancies carried out in the country are being developed. A comparative study<sup>17</sup> between the quality of the teleconsultings carried out by the family health teleconsultants and specialist teleconsultants showed that there are no significant differences between the two acting forms, with professionals presenting similar levels of satisfaction.

A study in Rio Grande do Sul<sup>18</sup> emphasized that over 50.000 clinical consultations were carried out. More than 15.000 health professional benefited from the teleconsultations and telediagnosis and teleeducation activities. The study shows that, even with the presence of structural limitations, telemedicine is potentially useful to better the quality of service and to expedite the flow between the different levels of service. A study from the State of Pernambuco<sup>19</sup> concluded that telehealth can contribute with the improvement of integral care to the assisted population's health, however

it needs to overcome the problems of adhesion to the intervention, especially when it comes to Teleassistance.

A study from Bahia<sup>20</sup>, involving teleconsultings and educational activities, concluded that the result is the expansion of professional actions and the access to specialties in more remote locations.

In the face of this scenario of the expansion of the national telehealth project, it is still necessary to carry out studies to comprehend the distinct benefits and the concrete reality that this program presents in the day to day SUS reality.

In the sense of deepening of some aspects related to the teleconsultings, the strategic component of the national telehealth project in Brazil, this article intends, in a context in which the doctors are satisfied with the completion of teleconsultancies, to compare the conduct indicated by the teleconsultants about maintaining the patient in the unit with the vision of the family health doctor, after the accomplishment of teleconsultancies, in the municipality of Belém, Minas Gerais,

Betim was chosen for this analysis for the fact that most of the teleconsultings were carried out by doctors that, in a continuous way, have held out teleconsultings through time, allowing an evaluation in context were doctors make regular use of the resource, knowing its limits and potentialities.

## Method

It is a cross-sectional study, with a descriptive and analytical approach. The researched universe refers to the 1157 teleconsultings carried out by the family health doctors from the municipality of Belém, Minas Gerais, in the period of may 2017 to may 2018. These teleconsultings are carried out in a system specially developed for this end, that presents in its scope a group of variables that allow for the identification of the expertise of the teleconsultant, conduct suggested by the teleconsultant just as the referral of the case pretended by the applicant, such as to refer or not the patient to a specialized consultation and measurement of the satisfaction of the applicants. These last two variables are filled after carrying out the teleconsulting.

Initially, a descriptive study was carried out regarding the satisfaction of the costumer to the teleconsultings, classifying them as very happy, happy, indifferent, unhappy and very unhappy. After that, the level of satisfaction was distributed by the different specialties.

A distribution of the teleconsultings by expertise was carried out depending on the conduct proposed by the teleconsultant just as by the referring or not the patient in the vision of the family health doctor. Afterwards, an analysis of variance to observe if in the specialties with the biggest requests occur significant differences regarding the global average of referrals to other levels of complexity in the vision of the teleconsultants and the family health doctors.

## Results

The PSF doctors are satisfied with the answer of the teleconsultings, with 94,5% falling between happy and very happy, as observed in table 1 below.

**Table 1** - Distribution of the teleconsultings in terms of level of satisfaction

Level of satisfaction regarding the teleconsultings	Absolute Number	%
Indifferent	28	4,0
Unhappy	8	1,1
Very unhappy	3	0,4
Happy	195	27,9
Very Happy	467	66,6
Subtotal	701	100,0
Didn't Answer	456	39,4
<b>Total</b>	<b>1157</b>	<b>100,0</b>

It can be observed on table 2 that the solicited specialties that have the biggest number of teleconsultings are: dermatology, orthopedics and traumatology, cardiology, neurology, endocrinology, medical clinic and rheumatology. As for the user satisfaction, all in all, there is a big prevalence between “happy” and “very happy” in all specialties. Among the specialties in which the very happy are above 70% there is medical clinic- 78%, cardiology – 76%, endocrinology – 79%. The ones who have the biggest percentage of happy are: dermatology 60%, neurology 63%, orthopedics 49% and rheumatology 56%.

**Table 2** - Distribution of the teleconsultings regarding the level of satisfaction by specialty – Betim

Specialty	Very Happy %	Happy %	Unhappy %	Very unhappy %	Indifferent %	Total
Angiology	70%	20%	10%	0%	0%	10
Cardiology	76%	24%	0%	0%	0%	74
General Surgery	67%	33%	0%	0%	0%	6
Pediatric Surgery	0%	0%	0%	0%	0%	1
Vascular Surgery	50%	50%	0%	0%	100%	2
Medical Clinic	78%	22%	0%	0%	0%	37
Dengue, Chikungunya and Dengue	0%	100%	0%	0%	0%	1
Dermatology	60%	32%	2%	0%	7%	162

Endocrinology and Metabolism	79%	21%	0%	0%	0%	33
Pediatric Endocrinology	67%	0%	33%	0%	0%	3
Nursing Treatment of Wounds	25%	50%	0%	0%	25%	4
Gastroenterology	91%	9%	0%	0%	0%	23
Gastroenterology/hepatology	73%	27%	0%	0%	0%	0
Pediatric Gastroenterology			0%	0%	0%	0
Geriatrics	56%	33%	0%	11%	0%	9
Gynecology	48%	24%	0%	0%	29%	21
Gynecology and Obstetrics	89%	11%	0%	0%	0%	18
Gynecology/ Human Reproduction	100%	0%	0%	0%	0%	1
Hematology	59%	41%	0%	0%	0%	17
Hematology - Pediatric	100%	0%	0%	0%	0%	1
Hemotherapy						
Infectiology	91%	9%	0%	0%	0%	11
Infectiology/ Dengue, Chikungunya, Zika,	0%	0%	0%	100%	0%	1
Microcephaly and Aedes Aegypti						
Mastology	50%	50%	0%	0%	0%	2
Family Medicine	0%	100%	0%	0%	0%	1
Nephrology	65%	35%	0%	0%	0%	1
Pediatric Nephrology	50%	50%	0%	0%	0%	2
Neurology	63%	27%	2%	0%	7%	41
Pediatric Neurology	57%	43%	0%	0%	0%	7
Pediatric Dentistry	100%	0%	0%	0%	0%	1
Ophthalmology	86%	14%	0%	0%	0%	7
Oncology	100%	0%	0%	0%	0%	1
Orthopedics and Traumatology	49%	44%	4%	0%	2%	45

Otolaryngology	50%	50%	0%	0%	0%	14
Pediatric Otolaryngology	100%	0%	0%	0%	0%	6
Pediatrics	74%	21%	0%	0%	5%	19
Pneumology	91%	9%	0%	0%	0%	11
Pediatric Pneumology	33%	33%	0%	0%	33%	3
Psychiatry	61%	36%	0%	0%	4%	28
Conventional Radiology and Computed Tomography	0%	100%	0%	0%	0%	1
Rheumatology	56%	37%	0%	4%	4%	27
Urology						
Subtotal	78%	17%	0%	0%	4%	23
100% 702						
Didn't Answer	454					
Total	1157					

As for the conduct suggested by the teleconsultant by specialty, it can be observed by table 3, that in 73,9% of the carried out teleconsultings, the teleconsultants suggest that the patients stay in the unit itself. There are specialties in which many teleconsultings are carried out and in which these rates exceed 80%: hematology (82,8%), medical clinic (80,8%), psychiatry (80,0%), dermatology (80,3%) and gynecology (90,3%). However, there are other specialties with bigger number of teleconsultings where these rates are low: ophthalmology and gastroenterology.

**Table 3** - Distribution of the teleconsultings regarding the conduct suggested by the teleconsultant by specialty, Betim, may 2017 and may 2018

Specialties	Keep the Unit	Referrals	Total of Solicitations	% Keep in Unit
Angiology	10	8	18	55,6%
Cardiology	86	23	109	78,9%
General Surgery	4	6	10	40,0%
Pediatric Surgery	0	1	1	0,0%
Vascular Surgery	1	1	2	50,0%
Medical Clinic	42	10	52	80,8%
Dengue, Chikungunya and Dengue	0	1	1	0,0%
Dermatology	228	56	284	80,3%
Endocrinology and Metabolism	39	14	53	73,6%
Pediatric Endocrinology	1	2	3	33,3%
Nursing	4	0	4	100,0%
Wound Treatment				

Gastroenterology	22	16	38	57,9%
Gastroenterology/ Hepatology	9	8	17	52,9%
Pediatric Gastroen- terology	1	0	1	100,0%
Geriatrics	11	1	12	91,7%
Gynecology	28	3	31	90,3%
Gynecology and Obstetrics	21	5	27	77,8%
Gynecology/Human Reproduction	1	0	1	100,0%
Hematology	24	5	29	82,8%
Total	1	0	1	100,0%
Infectiology	12	6	18	66,7%
Infectiology/Dengue, Chikungunya, Zika, Microcephaly and Aedes Aegypti	1	0	1	100,0%
Mastology	6	0	6	100,0%
Family Medicine	1	0	1	100,0%
Nephrology	19	8	27	70,4%
Pediatric Nephrology	3	0	3	100,0%
Neurology		24	73	67,1%
Pediatric Neurology	2	7	9	22,2%
Pediatric Dentistry	1	0	1	100,0%
Ophthalmology	3	9	12	25,0%
Oncology	0	4	4	0,0%
Orthopedics and Traumatology	62	21	83	74,7%
Otolaryngology	17	11	28	60,7%
Pediatrics Otolaryn- gology	5	2	7	71,4%
Pediatrics	23	9	32	71,9%
Pneumology	15	6	21	71,4%
Pediatrics Pneumology	2	1	3	66,7%
Psychiatry	32	8	40	80,0%
Conventional Radiol- ogy and Computed Tomography	1	2	3	33,3%
Rheumatology	31	19	50	62,0%
Urology	28	13	41	68,3%
<b>Total</b>	<b>846</b>	<b>311</b>	<b>1157</b>	<b>73,9%</b>

As for the conduct of the family health doctors about maintaining the patient in the unit after carrying out the teleconsultings, it can be observed that 44,8% intend on maintaining the patients in the unit. This rate also varies according to the specialties. There are specialties in which many teleconsultings are carried out, with distinct behaviors regarding maintaining the patient in the unit: hematology, medical clinic, psychiatry, dermatology and gynecology. However, there

are other specialties with a bigger number of teleconsultings where these rates are lower: ophthalmology and gastroenterology.

**Table 4** - Distribution of the teleconsultings according to specialties, by level of the conduct of the family health doctors, Betim, may 2017 until may 2018

Specialties	Absolute number of teleconsultings by the conduct of the family health doctor to maintain the patient in the unit			%
	YES	NO	Total	
-				Yes
Angiology	11	7	18	61,1%
Cardiology	33	76	109	30,3%
General Surgery	9	1	10	90,0%
Pediatric Surgery	1	0	1	100,0%
Vascular Surgery	2	0	2	100,0%
Medical Clinic	16	36	52	30,8%
Dengue, Chikungunya and dengue	1	0	1	100,0%
Dermatology	121	163	284	42,6%
Endocrinology and Metabolism	27	26	53	50,9%
Pediatric Endocri- nology	2	1	3	66,7%
Nursing and Wound Treatment	1	3	4	25,0%
Gastroenterology	21	17	38	55,3%
Gastroenterology/ hepatology	7	10	17	41,2%
Pediatric Gastroen- terology	0	1	1	0,0%
Geriatrics	3	9	12	25,0%
Gynecology	9	22	31	29,0%
Gynecology ad ob- stetrics	8	19	27	29,6%
Gynecology/ Human Reproduction	0	1	1	0,0%
Hematology	11	18	29	37,9%
Hematology - pediatric hemoterapy	0	1	1	0,0%
Infectiology	6	2	8	75,0%
Infectiology / Dengue, Chikungunya, Zika, Microcephaly and Aedes aegypti	1	0	1	100,0%
Mastology	2	4	6	33,3%
Family Medicine	0	1	1	0,0%
Nefrology	12	15	27	44,4%

Pediatric Nefrology	3	0	3	100,0%
Neurology	31	42	73	42,5%
Pediatric Neurology	6	3	9	66,7%
Pediatric Dentistry	0	1	1	0,0%
Ophthalmology	10	2	12	83,3%
Oncology	3	1	4	75,0%
Orthopedics and Traumatology	52	31	83	62,7%
Otolaryngology	17	11	28	60,7%
Pediatric Otolaryngology	2	5	7	28,6%
Pediatrics	9	23	32	28,1%
Pneumology	11	10	21	52,4%
Pediatric Pneumology	2	1	3	66,7%
Psychiatry	20	20	40	50,0%
Conventional Radiology and Computed Tomography	1	2	3	33,3%
Rheumatology	28	22	50	56,0%
Urology	19	22	41	46,3%
<b>Total</b>	<b>518</b>	<b>629</b>	<b>1147</b>	<b>44,8%</b>

Pediatric Surgery	0	0,0%	1	0	0
Vascular Surgery	1	50,0%	2	0,0	0
Medical Clinic	42	80,8%	52	69,2	36
Dengue, chikungunya and Dengue	0	0,0%	1	0,0	0
Dermatology	228	80,3%	284	57,4	163
Endocrinology and Metabolism	39	73,6%	53	49,1	26
Pediatric Endocrinology	1	33,3%	3	33,3	1
Nursing Wound Treatment	4	100,0%	4	75,0	3
Gastroenterology	22	57,9%	38	44,7	17
Gastroenterology/hepatology	9	52,9%	17	58,8	10
Pediatric Gastroenterology	1	100,0%	1	100,0	1
Geriatrics	11	91,7%	12	75,0	9
Gynecology	28	90,3%	31	71,0	22
Gynecology and Obstetrics	21	77,8%	27	70,4	19
Gynecology/Human Reproduction	1	100,0%	1	100,0	1
Hematology	24	82,8%	29	62,1	18
<b>Total</b>	<b>1</b>	<b>100,0%</b>	<b>1</b>	<b>100,0</b>	<b>1</b>
Infectiology	12	66,7%	18	25,0	2
Infectiology/Dengue, Chikungunya, Zika, Microcephaly and Aedes aegypti	1	100,0%	1	0,0	0
Mastology	6	100,0%	6	66,7	4
Family Medicine	1	100,0%	1	100,0	1
Nephrology	19	70,4%	27	55,6	15
Pediatric Nephrology	3	100,0%	3	0,0	0
Neurology	49	67,1%	73	57,5	42
Pediatric Neurology	2	22,2%	9	33,3	3

When you compare both rates related to maintaining the patient in the health unit in the vision of the teleconsultant and doctor of the Family Health Program, expressed in table 5, one can find a situation in which a decrease in practically all of the specialties occurs, with the last-mentioned sending an important number of the patients for the specialist, regardless of the teleconsultant's orientation. We begin in a situation with 73,9% onto a level of 44,8%. Still, almost half of the participants that had had teleconsultings won't pass through a specialist, which already indicates the benefits of implanting this project in Betim.

**Table 5** - Comparison between the absolute number and the % of teleconsultings that should be maintained in the unit, according to teleconsultants and PSF doctors after carrying out the teleconsultings – Betim – may 2017 until may 2018

Specialties	Absolute Number to maintain in the unit according to teleconsultants	Main-tain in the unit according to teleconsultants%	Total of Teleconsultations	Intention of main-taining in the unit according to PSF doctor %	Ab-absolute number of intentions to main-tain in the unit according to PSF doctor
Angiology	10	55,6%	18	38,9	7
Cardiology	86	78,9%	109	69,7	76
General Surgery	4	40,0%	10	10,0	1

Pediatric Dentistry	1	100,0%	1	100,0	1
Ophthalmology	3	25,0%	12	16,7	2
Oncology	0	0,0%	4	25,0	1
Orthopedics and Traumatology	62	74,7%	83	37,3	31
Otolaryngology	17	60,7%	28	39,3	11
Pediatric Otolaryngology	5	71,4%	7	71,4	5
Pediatrics	23	71,9%	32	71,9	23
Pneumology	15	71,4%	21	47,6	10
Pediatric Pneumology	2	66,7%	3	33,3	1
Psychiatry	32	80,0%	40	50,0	20
Conventional Radiology and Computed Tomography	1	33,3%	3	66,7	2
Rheumatology	31	62,0%	50	44,0	22
Urology	28	68,3%	41		22
<b>Total</b>	<b>846</b>	<b>-</b>	<b>1157</b>	<b>-</b>	<b>629</b>

In table 6, it can be observed that when one carries out an analysis of variance, there are significant differences between the distinct specialties, regarding maintaining the patient in the units according to teleconsultants just as in the PSF's vision.

**Table 6** - Comparison between maintaining in the units according to teleconsultants and intention to maintain in the units according PSF's doctor, after carrying out teleconsultings, in chosen specialties and analysis of variance

Specialties	Absolute Number Maintain in the unit according to teleconsultants	wMaintain in the unit according to teleconsultants%	Total of teleconsultings	Maintain in the unit according to PSF doctor %	Absolute Number - Maintain in the unit according to PSF doctor	F	P
Cardiology	86	78,90%	109	76	69,7	0,001	
Medical Clinic	42	80,80%	52	36	69,2	0,001	
Dermatology	228	80,30%	284	163	57,4	0,001	
Neurology	49	67,10%	73	42	57,5	0,001	
Orthopedics and Traumatology	62	74,70%	83	31	37,3	0,001	
Other	379	68,16	556	281	50,5	0,001	
<b>Total</b>	<b>846</b>	<b>73,1</b>	<b>1157</b>	<b>629</b>	<b>54,4</b>		

## Discussion

The reached results with the use of telehealth in assistance realities in many systematic reviews already show evidences in many areas such as diabetes, hypertension, kidney diseases, dermatology, pregnancy and ICU. In Brazil, the carried-out studies about user satisfaction show that the family health doctors are satisfied with the carried-out teleconsultings. In this study it was also found that 94,5% are satisfied with the teleconsultings. In Santa Catarina, in a qualitative study<sup>17</sup>, the evaluation of the users was "happy" in 15 teleconsultings, but ten of these evaluated that it partially attended to its doubt. Three were evaluated as very happy and attended totally and in two, indifferent, one evaluated that it attended partially, and the other didn't inform. A study<sup>21</sup> in Minas Gerais concluded that 95% of the professionals said they were happy with the teleconferences.

A study of asynchronous teleconsulting<sup>22</sup> aimed exclusively to general practitioners that act in primary care in health in a rural area in Italy evaluated 927 teleconsultings in cardiology, 18 in dermatology and 12 in endocrinology. Most of the participating doctors was very happy with the teleconsulting, the connection and the necessary equipment for the remote data transmission to the many specialties were considered satisfactory, and the quality of the specialists' suggestion in clinical problems was considered good.

A study carried out in North Carolina<sup>23</sup>, evaluated teleconsulting in dermatology, carried out by the primary care health professionals, destined to a rural area in North Carolina, United States, in which the professional requested clinical information and photos of some injuries, by e-mail for two dermatologists. In this study, 32% of the teleconsultings were classified as very useful by the health professionals, 54% as useful and 11% as useful, with a change in the initially provided in 17 cases (21%).

This study carried out here in Betim found out that in 73,9% of the teleconsultings the patients can be kept in the health unit itself, without referring him to specialists in the opinion of teleconsultants. This data supports studies carried out in Minas Gerais<sup>21</sup> and in Rio de Janeiro<sup>24</sup> that say respectively, that in 78% and 68,8% of the cases the teleconsultants also evaluated that the patients could continue in the health center itself. The study also observes an important difference between the distinct specialties, which raises the need to know these percentages so that the projects of approaching lines in the different specialties can present adequate results. Depending on the specialty, conducts of the teleconsultants regarding keeping the patient in the unit can be observed and vary between 25% and 91,8% in the specialties with the biggest number of teleconsultancies.

A result that causes a stir in this study is the fact that there is a much more significant distance between the indication of the teleconsultants to keep the patients in the unit and the indication of the family health doctors about this matter. This range varies between 73,9% and 44,8% putting an important challenge to the teleconsulting projects - which strategy can be put together to reduce this distance. The study also showed that this variance presents statistically

significant differences depending on the specialty.

This finding puts more complexity in the process of incorporating the telehealth resources in the Brazilian public network. Despite the advances, there are still great questions that need to be dealt with so that the incorporation process to present its full potential.

## Conclusion

Teleconsultings have a good evaluation by the family health doctors. However, teleconsultants indicate that 73,9% of the patients must stay in the basic units while the family health doctors indicate that less than 45% of the patients must be kept in the basic health units, configuring a situation of more difficulties for the process of incorporating telehealth in assistance realities. This constitutes another challenge for the national telehealth project to structure strategies to overcome them, deepening the process of incorporating telehealth resources in the Brazilian public network.

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