

# Factors associated with the teleconsultation process at the regional hospital “Manuel Núñez Butrón”, Puno, Peru

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## Abstract

**Introduction:** WHO recognizes the incorporation of ICTs as an opportunity for the development of public health and health systems management in support of health and health-related areas in Latin America and the Caribbean. Specifically in Peru, tele-health project initiatives are being developed with the aim of helping to improve access to health care and quality, to vulnerable populations, shortening distances, reducing costs. There are limitations and difficulties in the implementation process. Puno does not escape this reality due to its geographical location far from the capital, where Internet connectivity is expensive and deficient, and there are few specialized and trained human resources. **Objective:** To know the factors that can be associated with the teleconsultation process, considering the technical - computer - administrative and organizational aspects of the teleconsultation process at the “Manuel Núñez Butrón Puno” Regional Hospital. **Method:** A descriptive study was carried out to know the factors associated with the process of teleconsultation in the hospital studied using the technique of document comparison with the teleconsultations accumulated from January to August 2019 included the successful teleconsultations and the suspended or failed ones. The obtained data were entered into the Excel database, previous codification and organization, disaggregating according to variables of interest of the study, represented in tables and graphics. **Results:** the Telehealth Unit is not yet an organic unit. 11 out of 15 of teleconsulting physicians were unable to send sufficient information on clinical cases in the teleconsultation request due to lack of human resources, equipment and inputs in diagnostic support services; of the responses received, 14 out of 15 physicians were of the opinion that the scheduling of appointments for teleconsulting physicians is timely; the existence of interruptions in teleconsultations due to internet connection failures; consulting physicians opted for other means such as mobile phones to conclude the teleconsultation or rescheduled another date in the near future. Greater demand for teleconsultations before the National Institute of Children’s Health in Breña and San Borja, in the pediatric subspecialties, leading, pediatric cardiology and pediatric pneumology; followed by pediatric neurology and neurosurgery; 76% of teleconsultations were carried out in children under 5 years of age and 24% in those over 18 years of age; 29 successful teleconsultations were carried out and 4 failed cases due to the following: 2 patients were discharged before the teleconsultation, 1 died and another patient was referred to another facility, this in over 18 years, both in the Medical Service and the Intensive Care Unit. Referrals avoided in 58% of cases, with subsequent appointments of up to five. **Conclusion:** There is already an initial process for the use of telehealth resources in the hospital under study, with a positive assessment by the physicians, who specifically avoid referral to other levels of complexity.

**Keywords:** Teleconsultation; Telemedicine; Health Professionals; Health Services.

## Resumen

**Factores asociados al proceso de teleconsultas en el hospital regional “Manuel Núñez Butrón” Puno, Perú**

**Introducción.** La OMS reconoce como una oportunidad para el desarrollo de la salud pública y gestión de los sistemas de salud la incorporación de las TIC. en apoyo de la salud y de los ámbitos relacionados con la salud, en América Latina y el Caribe. Específicamente en Perú se viene desarrollando iniciativas de proyectos de telesalud con la finalidad de ayudar a mejorar el acceso a la atención de salud y calidad, a poblaciones vulnerables, acortando distancias, disminuyendo costos; existe limitaciones dificultades en el proceso de implementación. Puno no escapa de esta realidad con ubicación geográfica alejada de la capital, donde la conectividad a internet es costosa y deficiente e existe escaso recurso humano especializado y capacitado. **Objetivo:** Conocer los factores que pueden asociar al proceso de teleconsulta, considerando los aspectos técnico - informático - administrativo y organizacional del proceso de teleconsultas en el Hospital Regional “Manuel Núñez Butrón Puno”. **Método:** Se realizó un estudio descriptivo, utilizando la técnica cotejo de documentos, como informes de registros y aplicación de lista de chequeo. Como unidad de información, se utilizó los registros de teleconsultas acumuladas de enero a agosto del 2019. El criterio de inclusión estaban las teleconsultas exitosas y las suspendidas o fallidas. Los datos obtenidos se ingresaron a la base datos Excel con previa codificación y organización, desagregando de acuerdo a variables de interés de estudio, representados en tablas y gráficos. **Resultados:** la Unidad de Telesalud aún no es unidad orgánica. De los médicos teleconsultante; 11 de 15 no pudieron enviar suficiente información de casos clínicos en la solicitud de teleconsulta por falta de recurso humano, equipos e insumos en servicios de apoyo al diagnóstico; de las respuestas recibidas, 14 de 15 médicos opinaron que la programación de citas de médicos consultores es oportuna; la existencia de interrupción de teleconsultas por fallas de conexión del internet; médicos consultantes optaron otros medios como teléfono móvil para concluir la teleconsulta o reprogramaron otra fecha próxima. Mayor demanda de teleconsultas ante el Instituto Nacional de Salud del Niño de Breña y San Borja, están en las subespecialidades pediátricas, encabezando, cardiología pediátrica y neumología pediátrica; seguido de neurología y neurocirugía pediátrica; el 76% de las teleconsultas se desarrollaron en menores de 5 años y el 24 % en mayores de 18 años; se ejecutaron 29 atenciones de teleconsulta exitosas y 4 casos fallidos debido a lo siguiente: alta de 2 pacientes antes de la teleconsulta, fallecimiento de 1 y la referencia a otro establecimiento de otro paciente, esto en mayores de 18 años, tanto en el Servicio de Medicina y la Unidad de Cuidados Intensivos. Referencias evitadas en el 58% de los casos, con citas subsecuentes de hasta cinco citas. **Conclusión:** Ya existe un proceso inicial de uso de los recursos de telesalud en el hospital en estudio, con valoración positiva por parte de los médicos, quienes específicamente evitan la derivación a otros niveles de complejidad

**Palabras claves:** Teleconsulta; Telemedicina; Profesionales de la Salud, Servicios de Salud.

*Fatores relacionados ao processo de teleconsulta no Hospital Regional Manuel Núñez Butrón, Puno, Perú*

**Introdução:** A OMS reconhece a incorporação das TICs como uma oportunidade para o desenvolvimento da saúde pública e da gestão dos sistemas de saúde em apoio à saúde e áreas relacionadas à saúde na América Latina e no Caribe. Especificamente no Peru, estão sendo desenvolvidas iniciativas de projetos de telessaúde para ajudar a melhorar o acesso aos cuidados de saúde e a qualidade das populações vulneráveis, diminuindo distâncias e reduzindo custos. Existem limitações e dificuldades no processo de implementação, Puno não escapa a essa realidade devido à localização geográfica distante da capital, onde a conectividade à Internet é cara e deficiente, há pouco recurso humano especializado e treinado. **Método:** Foi realizado um estudo descritivo, utilizando a técnica de correspondência de documentos para conhecer os fatores relacionados ao processo de teleconsulta no hospital estudado usando os registros das teleconsultas acumuladas de janeiro a agosto de 2019 com o critério de inclusão de teleconsultas bem-sucedidas e suspensas ou com falha; Os dados obtidos foram digitados no banco de dados Excel, após codificação e organização, desagregando de acordo com as variáveis de interesse do estudo, representados em tabelas e gráficos. **Resultados:** a Unidade de Telessaúde ainda não é uma unidade orgânica. Dos médicos teleconsultores 11 de 15 não puderam enviar informações suficientes sobre casos clínicos no pedido de teleconsulta devido à falta de recursos humanos, equipamentos e suprimentos nos serviços de suporte diagnóstico; das respostas recebidas, 14 dos 15 médicos acreditavam que o agendamento das consultas médicas é oportuno; a existência de interrupção de teleconsultas devido a falhas na conexão à Internet; Os médicos consultores optaram por outros meios, como um telefone celular, para concluir a teleconsulta ou reagendar outra data futura. Maior demanda por teleconsultas junto ao Instituto Nacional de Saúde Infantil de Breña e San Borja, nas subespecialidades pediátricas, cabeçalho, cardiologia pediátrica e pneumologia pediátrica; seguido por neurologia e neurocirurgia pediátrica; 76% das teleconsultas foram realizadas em crianças menores de 5 anos e 24% naquelas com mais de 18 anos; Foram realizados 29 serviços bem-sucedidos de teleconsulta e 4 casos fracassados, devido a: alta de 2 pacientes antes da teleconsulta, morte de 1 e encaminhamento para outro estabelecimento de outro paciente, em pacientes acima de 18 anos, ambos na Medicina e Unidade de Terapia Intensiva. Referências evitadas em 58% dos casos, com consultas subsequentes de até cinco consultas. **Conclusão:** Já existe um processo inicial de utilização dos recursos de telessaúde no hospital em estudo, com avaliação positiva dos médicos, que especificamente evitam o encaminhamento para outros níveis de complexidade.

**Palavras-chave:** elemedicina; Profissionais de Saúde, Serviços de Saúde.

## INTRODUCTION

In recent times, information technology and the digital world have had a major influence on the development of medicine. According to the WHO, it is an opportunity for the development of public health and management of health systems, the incorporation of ICT. Telehealth is defined as 'the cost-effective and safe use of information and communication technologies in support of health and health-related areas, including health care services, health monitoring' and it is stated that strengthening health systems through telehealth, 'reinforces fundamental human rights by increasing and improving equity, solidarity, quality of life and quality of care' <sup>1</sup>.

At the pace of the growing use of new information and communication technologies (ICTs), several countries in Latin America and the Caribbean have been developing tele-health project initiatives to help improve access to and quality of health care for the most vulnerable populations, shortening distances and reducing costs. However, the incorporation of information technology is very incipient, and few countries still have policies to guide their development, and there are limitations and difficulties in the implementation process <sup>2</sup>.

In the middle of the 21st century and with the rise of Information and Communication Technologies (ICTs) in Peru, telemedicine in the country as such is a reality, as it is in other countries of the region and the world; however, it is not in the same magnitude as developed countries. However, it is not exempt from challenges and risks in its implementation and in the evaluation of its impact since many health facilities have not implemented the telehealth service, either because of geographic inaccessibility, which makes functional coordination and integration in local and provincial networks

with more complex health service providers scarce. In addition, private providers are concentrated in the country's capital and departmental capitals, as are the IPRESS clinics with the greatest capacity for resolution, which means that a significant segment of the population does not have access to health services. Inequality in access to health resources is evident even between citizens of the same country and the health system.<sup>3</sup>

As the governing body of the health sector, the Ministry of Health is responsible for formulating sectoral policy, and these policies are therefore a mechanism for meeting the demands of the population and solving their problems. However, there are limitations and difficulties in the implementation process, as health professionals still do not have much experience with the use of technological tools in the application of the processes, so training is very important, the availability and operation of information technology and communication in very remote regions is necessary, as is the standardization of processes for recording and information flow of teleconsultation activities.

The results obtained deserve to be analyzed with the purpose of improving them with the existing resources and thus to bring the health services closer to the population living in remote places, with scarce health resources and, thus, to improve the accessibility to them. Subsequently, to improve the quality of care by allowing the training and decision support of health professionals located in remote areas. More recently, it is being considered as a tool for improving efficiency in health services, since it allows the sharing and coordination of geographically distant resources or the redesign of health services to optimize resources and increase coverage through the use of information and communication technologies (ICT) in the national health system <sup>5</sup>.

In a study conducted by Correa Diaz <sup>6</sup>, he revealed that 58.33% of doctors in the cities of Medellín, Cali, Bucaramanga and Bogotá are practicing telemedicine; the remaining 41.67% said they do not use this new form of distance medicine in their health institution.

According to Velasquez M, Pacheco <sup>7</sup>, the barriers identified in the teleconsultation process mainly affect the consulting physician; however, productivity is increasing. Despite the existing barriers, it was identified that there are patients who receive follow-up by the program, which favors access to care.

Therefore, this study has the general objective of knowing the real situation of the technical, computer, administrative and organizational aspects of the tele-consultation process at the "Manuel Núñez Butrón" Regional Hospital in Puno en Peru.

The objective is to know the factors associated with the process of teleconsultation, considering the technical - computer - administrative and organizational aspects of the process of teleconsultation in the Regional Hospital "Manuel Núñez Butrón" Puno, as IPRESS consultant; and as a consultant, to know the availability of the basic equipment, effective connectivity, and number of successful teleconsultations carried out as IPRESS consultant and as a consultant, in the different specialties and subspecialties, avoided references and time elapsed from the agenda to the execution of the teleconsultation and subsequent appointments as co-management.

## METHOD

The design of this case study is descriptive, the technique of data collection is through the interview and comparison of documents such as reports and records and as a tool application checklist, as a unit of information are the records of teleconsultation information accumulated from January to August 2019, Inclusion criterion all successful teleconsultations and suspended or failed teleconsultations, the data recorded considering the technical - computer - administrative and organizational aspects of the process of teleconsultations in the Regional Hospital "Manuel Nuñez Butron" in Puno, as a sample of the real situation of the implementation of the telehealth program where it is evident what is related to teleconsultations. Once the quality control of the data obtained has been carried out, it is entered into an EXCEL database, after the variables have been coded and organized, and broken down according to variables of interest to the study, represented in tables and graphs, with the respective analysis and interpretation of the same.

In order to obtain the due acceptance and cooperation of the informants in the field research, according to Belmont Report (1978) the 4 primordial principles will be put into practice: of autonomy, of non maleficence, of charity, and of justice, in the present study the decisions of the study subjects to participate in the research are respected since only the health professional who signs the informed consent will be studied. Likewise, when describing what has been observed, it does not predispose the subject to significant risks or harm. And by knowing the factors associated with the development of teleconsultations, this subject can be addressed, not implying a risk for the health professionals under study. Finally, the right to fair treatment and to preserve their privacy is included, with the health professional respecting their rights as human beings, and only their data will be used for research purposes, with strict privacy for the present study.

## RESULTS

Based on the relation to the technical, administrative and organizational aspects, the following result was obtained in the process of teleconsultation, when applying the checklist and interview made to the consulting doctors.

Tabla 1- Aspectos tecnico informatico administrativo y organizacional dela unidad de telesalud , IPF Hospital Regional " Manuel Nunez Butrón, Punto.

TABLA N° 01																
ASPECTOS TECNICO INFORMATICO ADMINISTRATIVO Y ORGANIZATIVO DE LA UNIDAD DE TELESALUD, IPRESS HOSPITAL REGIONAL "MANUEL NUÑEZ UTRON" PUNO PERU 2019																
IPRESS	TIPO DE UNIDAD		PRESUPUESTO ASIGNADO		RESOLUCION DE CREACION		REGISTRO RENIPRESS SUSALUD		AMBIENTE DESTINADO		EQUIPO BASICO		INTERNET BANDA ANCHA		RECURSO HUMANO	
	FUN CIO NAL	ORGA NICA	SI	NO	SI	NO	SI	NO	SI	NO	SI	NO	SI	NO	PROFES IONAL DE LA SALUD	SOPORTE TECNICO
HR.MNB PUNO	x			x		x		x		x				En proceso de solicitar	01 Enfermera	Eventualme nte apoya personal de la Uniad de Estadistica

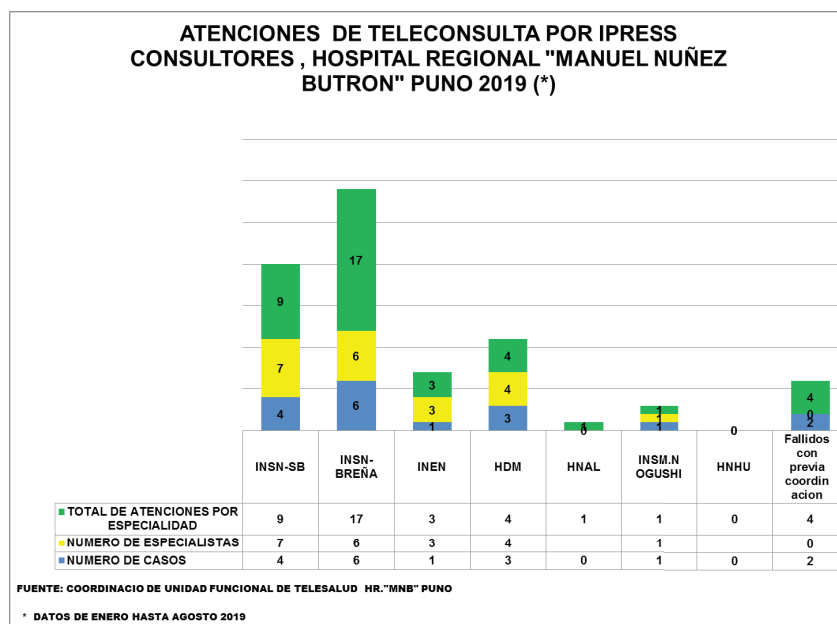
At the “Manuel Núñez Butrón”, the Telehealth Unit is still not considered an organic unit, it continues to be functional, it has not been assigned a budget, the resolution to create it is in the process of being regularized, and the RENIPRESS SUSALUD registry has been assigned a small environment for the Telehealth Unit, does not have broadband internet, it works on a shared basis, it has basic equipment such as video conference, a 65-inch screen, a personal computer, a multifunctional equipment (printer, scanner and photocopier) and necessary furniture such as a desk, conference tables with eight chairs and an adult stretcher; As for human resources, it has a nurse and eventually supports the computer staff of the Statistics Unit. When presenting the clinical cases, 11 out of 15 of the teleconsultants commented that they were not regularly able to send sufficient information on the cases requested for teleconsultation, due to a lack of human resources and the equipment necessary to complete the auxiliary examinations to support the diagnosis in a timely manner, and also due to the lack of training and knowledge about telemedicine of the hospital’s colleagues and the coincidence in time (working hours) on the part of the specialist doctor and the medical unit requesting the service. With regard to the response received when making a teleconsultation request, 14 of 15 hospital physicians, including general practitioners and specialists, were of the opinion that the scheduling of appointments by consulting specialists is timely. Regarding the interruption of teleconsultations due to Internet connection failure, the consulting physicians opted to communicate by mobile phone, email or messaging services such as WhatsApp in coordination with the head or tele-health coordinator to conclude or schedule the session at an earlier date. As for the regulatory elements, it was identified that it is necessary to develop process manuals appropriate to reality, which can be used as training material for doctors who request teleconsultations, and train them to general practitioners and specialists who have the regional hospital, to provide care as a teleconsultant, The project also aims to provide technical assistance in policy and management of information technology and communication tools to all primary health care facilities in the Puno region, which would boost demand for teleconsultations and thus achieve greater coverage among the population in need.

In the teleconsultation process, the interaction of the consulting physician with the IPRESS Consultant specialist begins with the submission of the teleconsultation request along with the informed consent form duly signed by the requesting health professional and the patient or proxy.

The Regional Hospital “Manuel Núñez Butrón” does not yet have a program or software for the exchange of clinical information of the patient, it is done manually and directly with sending the data through the institutional mail and WhatsApp of the coordinator, always protecting the privacy of the information and managing the agenda of teleconsultations.

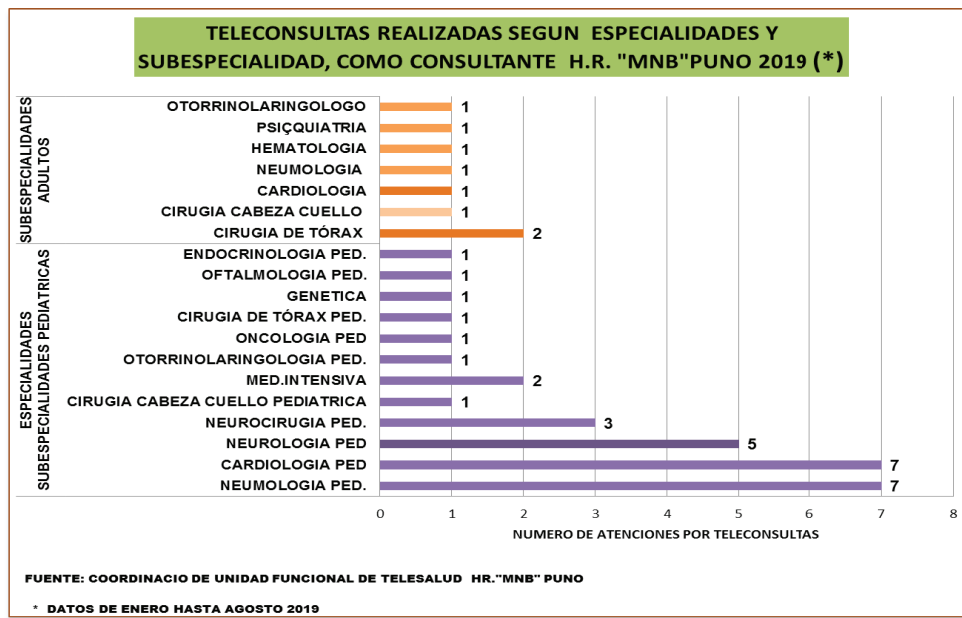
In the period between January and August 2019, only 17 cases of different age groups were consulted as IPRESS Consultant, in different specialties and subspecialties, as well as simple and tele-consultations, even with joint management of 2 appointments up to 5 consecutive appointments, requested by the services or medical units of the hospital, to the specialized institutes and hospitals of greater complexity or resolution capacity that are located in the capital, where the largest number of medical specialists are concentrated.

Figure 1: The number of teleconsultations by IPRESS in 2019.



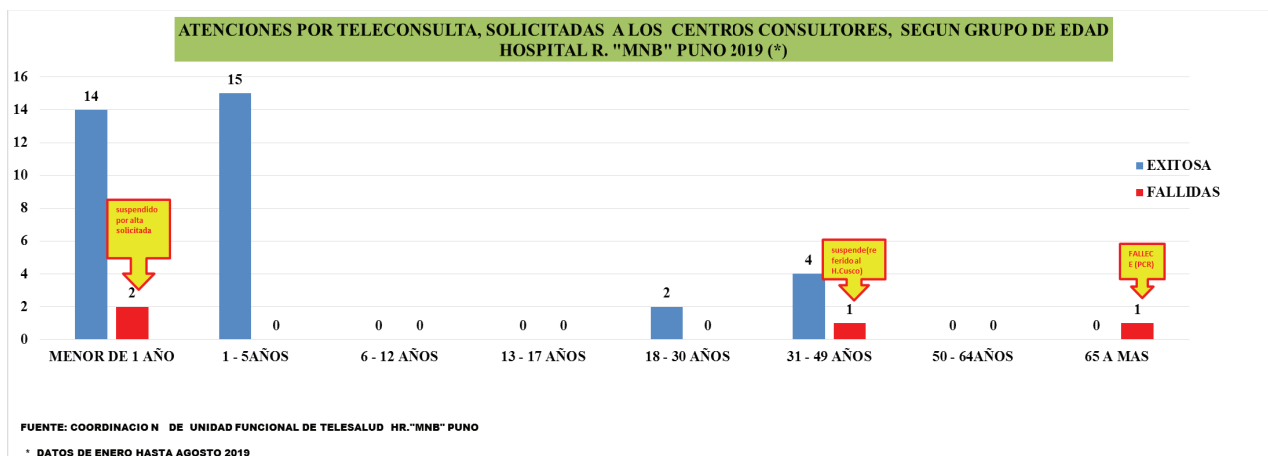
The figure 1, present the IPRESS consultants as the National Institute of Children's Health of San Borja y Breña and Hospital Nacional Dos de Mayo, which attended 4, 6, and 3 cases respectively, for the different subspecialties requested, either simple teleconsultation and teleboards, resulting in more than one specialist per case, and the repetition of subsequent appointments in the case of co-management, with two to five subsequent appointments, making a total of 9.17, 4 visits made by each IPRESS consultant, there were also cases of failure or suspension for different reasons (for requested discharge, for death and for referring to another establishment), all of which occurred before the agreed teleconsultation was carried out.

Figure 2



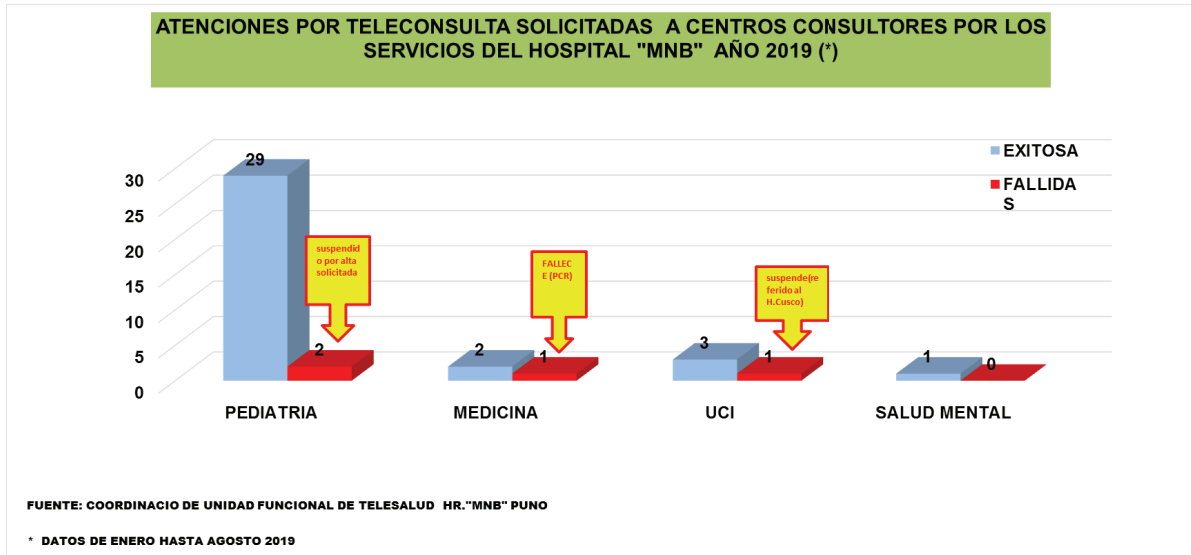
The figure 2 shows that the pediatric subspecialties are the ones with the highest demand, leading pediatric cardiology and pediatric pneumology, followed by pediatric neurology and neurosurgery, which corroborates the demand in the National Institutes of Child Health shown in the previous graph No. 01, compared to the study conducted in the Oaxaca Mexico Telehealth Network where the internal medicine service is the one with the highest demand.

Figure 3



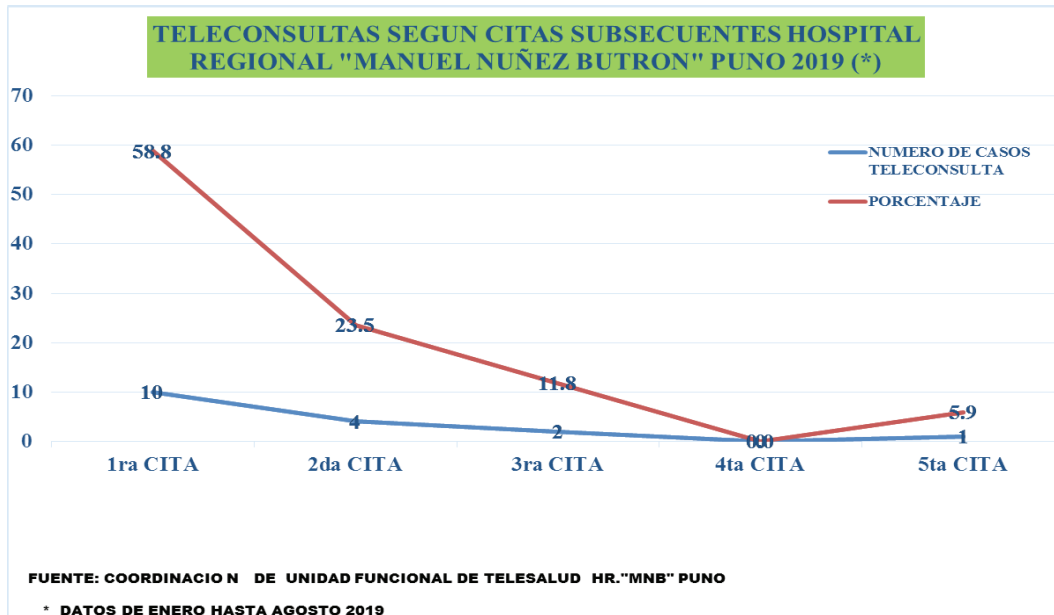
The age group with the highest demand is actually children under 5 years of age, resulting in a total of 29 successful teleconsultations, referring to the number of attended of the total of 17 cases, 13 cases are under 5 years of age which represents 76% and 24% over 18 years, which implies that in remote places far from the capital we lack pediatric specialists and subspecialists, who are concentrated in big cities.

Figure 4



The graph shows the health services of the regional hospital “Manuel Núñez Butrón” in Puno, with greater demand are the pediatric services, reaching 29 successful teleconsultation services and two failed cases for having requested their discharge before the execution of the agreed teleconsultation. Two cases were unsuccessful and were suspended due to death, while the other was referred to another facility in both the Medical Service and the Intensive Care Unit.

Figure 5



Of the 17 patients with effective teleconsultations, 58.8% are with a first appointment, and cases that were resolved with two appointments 23.5%, likewise there was a case management with three appointments and with 5 appointments, which represents 11.8% and 5.9% respectively. This indicates that from the first consultation the case was not left until recovery, which was very satisfactory for the patient and his or her family members, as well as for the health professionals

## DISCUSSION

In Peru, the National Telehealth Strategy depends on the human and material resources that each health institution provides to its Telehealth Units. It implies that the organization of telemedicine services should have a pre-determined budget and registered management documents for optimal operation. The main tele-health challenges are policies, infrastructure, and training of human resources involved in tele-health activities. Currently, the Manuel Nuñez Butron Regional Hospital in Puno provides its services in an environment of relative scarcity of medical specialists and supplies. In this sense, it can be inferred that the dedication and use of telemedicine services by doctors is very low, as also revealed in a study that in the cities of Medellín, Cali, Bucaramanga and Bogota, is practicing telemedicine in 58.33%, the remaining 41.67% of doctors, by contrast, said not to use in their health institution of this new form of distance medicine.<sup>(6)</sup> The results show that teleconsultations as IPRESS consultants are more feasible to carry out and access the specialties and sub-specialties offered by IPRESS consultants. In comparison with other large cities in developed countries, teleconsultations are on a large scale and very advanced, even with the use of virtual biomedical equipment. The national tele-health network faces the challenge of covering care in marginalized, isolated and scattered areas, since these are the main potential beneficiaries of tele-health services in the Puno region. For the most unequal population, the medical care provided by the Telesalud service has the potential to avoid transport costs, stay outside their place of origin, leaving the family and social environment to deal with their daily subsistence tasks, and in the current year, 58% of the total cases requested were not referred, which is below the national average of 80%, despite the conditions in which the care is provided. As a result of the interviews conducted with the physicians who were consultants in this study, they were unable to comply with the requirement to send complete information on the clinical case to the IPRESS Consultants, precisely because of a lack of competent human resources, equipment and inputs in diagnostic support services, and a lack of training for health professionals. As well as the telehealth team in handling the technological tools, in comparison with health facilities in other regions and developed countries they are very well implemented with all that is necessary, with technology, competent human resources, and sufficient inputs to respond to the needs of the population, guaranteeing quality of care, and patient safety. It was also observed that one of the barriers to the implementation and progress of the teleconsultation process is the lack of availability of doctors as consultants, which is why it is necessary to estimate the availability of doctors as consultants because the number of requests for teleconsultations depends on them. The barriers identified in the teleconsultation process mainly affect the consulting physician<sup>(7)</sup>

With regard to the limitations of the study, it should be noted that there are difficulties such as the time factor in making face-to-face visits to rural medical units in the region and applying the instrument to collect information and find out their perceived opinion regarding telemedicine.

With this case study we know the real situation of the Telehealth Unit of the Regional Hospital "Manuel Nuñez Butron" of Puno, in relation to the technical, administrative and organizational aspects of the teleconsultation process: assigned budget, management documents, insufficient human resources, equipment and inputs, lack of broadband internet, operates with shared internet, very little training; which hinders the development of telehealth activities and even more so as an IPRESS Regional consultant and to be able to respond to the teleconsultation requests, as evidence it did not carry out any teleconsultation.

As for the teleconsultation process as an IPRESS consultant, the highest demand is with the National Institutes of Child Health, Breña and San Borja, with the pediatric subspecialties, heading, pediatric cardiology and pediatric pneumology, followed by pediatric neurology and neurosurgery, predominantly the under-5 age group, which represents 76% of the total of 17 cases consulted and 24% of the over-18 age group 4 cases consulted, A total of 29 successful and two unsuccessful teleconsultations were carried out in the under-5 age group, because they requested their discharge before the execution of the agreed teleconsultation, which implies that in remote places far from the capital we lack pediatric specialists and sub-specialists, who are concentrated in the big cities; and 08 care in the age group over 18 years requested by the services of Medicine, Mental Health and Intensive Care Unit, of which two cases failed and were suspended due to death and the other by reference to another establishment.

Referrals were avoided in 58 per cent of the total number of cases requested, with a target of 80 per cent below the national average. The consulting physicians were of the opinion that the scheduling of appointments by consulting specialists is timely; however, they were unable to send complete patient information due to difficulties such as lack of human resources, insufficient equipment and supplies at the Regional Hospital, there was an interruption in the execution of the teleconsultation due to internet failures, opting for the use of mobile phones, to conclude the teleconsultation and schedule the session at a later date.

The time elapsed from the time the teleconsultation is scheduled until its execution is over 22 hours, which represents 71%, which shows that it is from one day to the next, and from 2 to 6 hours is 29%, provided that the coordination is early in the day.

Subsequent appointments ranged from two to five appointments in co-management cases with the presence of two and three specialists.

## CONCLUSION

There is already an initial process for the use of telehealth resources in the hospital under study, with a positive assessment by the physicians, who specifically avoid referral to other levels of complexity.

However that studies should be conducted to determine the population's knowledge about the availability of teleconsultations in first-level health facilities, and thus promote the development of teleconsultations.

Besides that effective and continuous coordination between the health care teams of primary care facilities and the regional hospital should be promoted to increase the productivity of the tele-health service in synchrony with the support of regional authorities and consulting medical units.

## REFERENCES

1. Pan American Health Organization. Framework for the Implementation of a Telemedicine Service Washington, DC : PAHO, 2016.
2. Pan American Health Organization. Definition of indicators for telemedicine projects as a tool for the reduction of health inequities: document of analysis and results of a community of practice. Washington, DC: PAHO, 2016.
3. Pan American Health Organization. Framework for Implementing a Telemedicine Service. Washington, DC : PAHO, 2016. 1
4. Legislative Decree No. 1303, Legislative Decree that optimizes processes related to Telesalud.
5. Law No. 30421, Framework Law on Telehealth
6. Correa, A. (2017). Advances and barriers to telemedicine in Colombia. *Journal of the Faculty of Law and Political Sciences*, 47 (127), pp. 363-384.
7. Velázquez M, Pacheco A, Silva M, Sosa D. Evaluation of the teleconsultation process from the provider's perspective, Programa de Telesalud de Oaxaca, Mexico. *Rev Panam of Public Health*. 2017; 41:e22.
8. Supreme Decree No. 028-2005-MTC, approving the National Telehealth Plan.
9. DS 003-2013-JUS, which approves the Regulation of Law N°29733, Law of Personal Data Protection.
10. Ministerial Resolution No. 751-2004/MINSA, which approves NT No. 018-MINSA/DGSP V.01 Technical Standard for the Reference and Counter-reference System for Ministry of Health Establishments.
11. Ministerial Resolution No. 365-2008-MINSA, approving NTS No. 667-MINSA/DGSP-V.01 "Technical Standard for Health in Telehealth".
12. Ministerial Resolution No. 381-2008-PCM, which approves guidelines and mechanisms for implementing the interconnection of electronic information processing equipment among State entities.
13. Ministerial Resolution No. 546-2011/MINSA, which approves NT No. 021-MINSA/DGSP-V.03 "Categories of Health Sector Establishments".
14. Ministerial Resolution No. 660-2014/MINSA, approving NTS No. 110-MINSA/DGIEM-V.01 "Infrastructure and Equipment of Health Facilities at the Second Level of Care".
15. Ministerial Resolution No. 045-2015/MINSA, approving NTS No. 113-MINSA/DGIEM-V.01 "Infrastructure and Equipment of Health Facilities at the First Level of Care".
16. Ministerial Resolution No. 1069-2017/MINSA approves Administrative Directive No. 242 -MINSA/2017/DGAIN "Administrative Directive establishing the Health Care Portfolio in First Level of Care Health Facilities".
17. Ministerial Resolution No. 902-2017/MINSA Catalog of Medical and Health Procedures in the Health Sector
18. Ministerial Resolution No. 467/2017 MINSA approves the Operations Manual of the Directorates of Integrated Health Networks.
19. Ministerial Resolution No. 214-2018/MINSA Approves NTS No. 139-MINSA/2018/DGAIN: "Technical Health Standard for the Management of Clinical Records.
20. Superintendent Resolution No. 053- 2015-Yourhealth/ Approval of Regulations for the National Registry of Health Services Providers Edition", in all the member entities of the National Information System.
21. Chief Resolution No. 231-2017 SIS, which approves the Administrative Directive that regulates the registration of benefits provided to insured persons in the framework of Telehealth SIS in public IPRESS.