



Telemedicine

TeamViewer enables telemedicine project of the National University of San Juan



The National University of San Juan, Argentina

The National University of San Juan (UNSJ) is an Argentine public university located in San Juan, capital of San Juan province in Argentina's mid-west (coordinates: 31°32'14.15" S – 68°31'13.71" W) more than one thousand kilometres west of Buenos Aires. Founded on 10 May 1973, it has an average of more than 20,000 students and different offices and faculties from which numerous research projects are carried out. Among these community-related projects, the Biomedical Division of the Bioengineering Programme stands out. It was the birthplace of the Telemedicine Project, a scheme to help provide remote primary health care to places with geographic, economic and social barriers.

„Integrating information technologies such as TeamViewer, together with medical tools such as electronic stethoscopes and digital electrography programs provides us with the option of having remote virtual consultations with those areas that need it most, given the lack of health infrastructure, economic resources, and access roads for vehicles.“ Dr Rubén Carrizo Paez, Head of the Biomedical Division in Bioengineering at UNSJ

Challenges

- Being able to contribute with local **primary care** to carry out prevention, especially in cardiology, to the inhabitants of areas that are **practically isolated**
- **Supporting** prevention, training and awareness programmes on healthy habits
- **Detecting** diseases early, advising on more specific treatments and, in the case of children, monitoring the growth curve.

Solution

Thanks to **TeamViewer's remote communication options** used to carry out **telemedicine**, the Project for the Application of Telemedicine in Remote Primary Health Care has made it possible for health care personnel and teachers from the university and the Ministry of Education, together with municipalities, NGOs and patients, to connect and have **virtual consultations**, even when separated by great distances. Even **electrocardiograms, tele-auscultation, tele-oximetry and remote Holter monitoring** have been performed. To carry out these tests, a person was trained in the place where the patients were located. That person connected the patient and transferred the data online to the doctor, who then evaluated the results and used them to make decisions.



The possibilities of remote connection software, together with the coordination of UNSJ, have enabled more than 250 health studies in some of Argentina's most inaccessible areas

Currently, information and communication technologies (ICT) have been successfully integrated and are improving day-to-day operations in many sectors. In particular, these improvements are being achieved in areas such as health care, where due to their complexity and/or amount of data, it is necessary to have agile and flexible systems.

Nowadays, it has become normal to talk about telemedicine in urban areas thanks to the possibilities of remote assistance and monitoring that TeamViewer offers along with the other digital systems integrated into it. However, even within countries including some of the world's major capitals, such as Argentina, there are regions where orographic circumstances, together with a lack of development and infrastructure, mean that inhabitants lack resources and basic care, especially at the health care level.

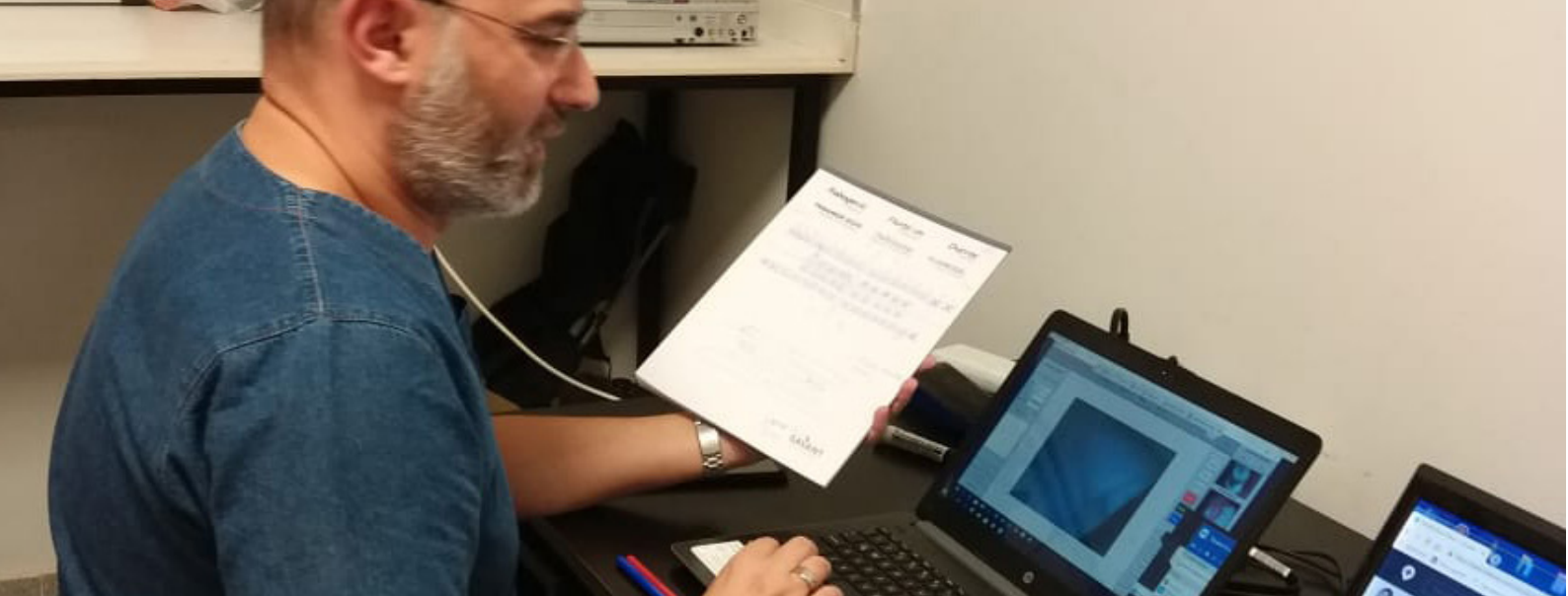
In addition, on numerous occasions, sociocultural factors lead to many villages coexisting in virtual isolation. With knowledge of the geographical characteristics of the western region of Argentina, with special emphasis on Salta province in the north and its own province of San Juan, the National University of San Juan began developing the unprecedented Telemedicine Project in 2018 in its eagerness to help improve the community.

Birth of the project

The initiative was born years ago at the chair of Bioengineering at the National University of San Juan, on the initiative of a research team headed by cardiologist Rubén Carrizo Páez. Its objective is to be able to provide primary health care, especially in the area of cardiology. With the arrival of new ICT technologies and, crucially, the incorporation of TeamViewer into the project and the option of remote assistance, the initial objective was extended geographically. In this way, those regions with a large population dispersion, shortage of specialists and located at great distances from the largest urban centres were identified.

Subsequently, the specialised staff in the university's health and cardiology division were in charge of training the teaching staff of the different schools in these remote settlements in order to successfully coordinate and carry out virtual medical consultations. These have been carried out since then for the inhabitants of these virtually isolated areas, with a special focus on young school children and pregnant women. The goals are to detect diseases, advise on more specific treatments and also monitor growth curves in the case of children. Children are also monitored as a requirement for playing sport.

Routinely, they undergo a prior medical and cardiac examination to avoid episodes of cardiac arrest or other complications related to sudden death. For the project to start, it was necessary to have the required network infrastructure, after a satellite connectivity plan on a national scale by the company ARSAT, to provide internet access to more than 2000 schools located in the regions in the north and west of the country. Together with TeamViewer's possibilities for real-time monitoring, remote consultations and sharing documents with nurses and support staff in different locations, provided the foundations to carry out the first experiences.



First applications

The first experience was carried out in Sierras de Elizondo, in San Juan province, an inhabited area about eight hours on the back a mule from the nearest town as the only possible means of transport. To date, accessing a medical test such as an electrocardiogram required three days for any resident who could ride this particular form of transport: one day of travel, one day for testing and a third day back. Javier Ortiz, Director of the Marcos Gómez Narváez School, in the Sierras de Elizondo Valle Fértil region, and project coordinator at the local level, said: "The implementation of TeamViewer has meant that an electrocardiogram can be done remotely, and through remote control software, the different devices can be managed and you can talk to the person having the electrocardiogram like during a normal consultation.

You can take the oxygen saturation in their blood in a simple way, take their blood pressure and auscultate as if you were next to the person."

Another region where the Telemedicine project has been carried out successfully was Aguaray, a town in the north of the country, bordering Bolivia, in Salta province. In addition, it is known as one of the oldest towns, where inhabitants of different ethnic groups are settled, adding sociocultural difficulties in addition to geographical ones. The possibilities of an internet connection via satellite, together with the flexibility of the software for meetings and file sharing, are combined with medical instruments, oximeters, blood pressure monitors, oral cameras, stethoscopes and scales, among others, to faithfully reproduce the telemedicine experience.

Results

The conjunction of these tools allows health professionals and patients interact to obtain an instant diagnosis during the medical evaluation just by sitting in front of the computer. The results and diagnosis of studies such as electrocardiograms or odontograms are printed and received by the patient at the same time as the consultation, thanks to TeamViewer's file sharing option. The success of the implementation of the project led by Dr Carrizo Páez has already extended to more than 250 cases of health examination and prevention of heart disease, together with the monitoring of growth curves in successive check-ups.

These check-ups were perfectly classified and organised for the children of the different schools covered by the project, as well as groups from these villages with scarce resources at their disposal.

The great possibilities of telemedicine, which allows for vulnerable areas to be reached with TeamViewer's communication technology and software, means that the project continues to expand to new areas that are difficult to access, such as the valleys of Acambuco, Tuyunti, La Loma and El Algarrobal Salta.

TeamViewer

As a leading global provider of remote connectivity solutions, TeamViewer empowers users to connect anything, anywhere, anytime. The company offers secure remote access, support, control, and collaboration capabilities for online endpoints of any kind. By innovating with cutting-edge yet easy-to-deploy Augmented Reality (AR) and Internet of Things (IoT) implementations, the company enables businesses of all sizes to tap into their full digital potential. TeamViewer has been activated on more than 2 billion devices; more than 45 million devices are online at any time.

For more information, go to www.teamviewer.com and follow us on social media.

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