



Improving access to care in rural Portugal through a telehealth program

Achieving increased quality of life while saving
patient time and health expenditures

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In a hospital in Évora, the capital of a rural region of Portugal, heart patients from far and wide are already experiencing the future of interventional cardiology. Telehealth and innovative technologies facilitate and optimize high-quality treatment and care – even in the sparsely populated remote areas of the Alentejo. Two patients share their stories of recovery.

Seeking high-quality cardio vascular care

At some point, the first symptoms set in. “I was always tired. My legs and hands hurt,” says Francisco Antonio Rosa. He didn’t know what was wrong. “I had always been healthy and full of energy,” says the 84-year-old.

Despite his advanced age, Francisco was still managing his pastry shop (the well-known Pastelaria Dâmaso in the Avenida de Roma in Lisbon) every day from morning till night, up until six months ago. “The contact with my regular customers has always been very important to me,” he explains. But suddenly his health didn’t allow him to work anymore. Medical examinations revealed that Francisco had a heart valve defect. His cardiologist recommended that he seeks treatment from Portugal’s renowned interventional cardiology specialist, Professor Lino Patrício, who worked at the Santa Maria University Hospital in Lisbon. That sounded perfect, as Portugal’s largest university hospital is right next to Francisco’s home. The problem was that Prof. Lino was no longer working at the site.



84-year-old Francisco benefits from the telehealth program – he can receive medical care even from his own home.

He had moved to the Hospital do Espírito Santo de Évora (HESE), a hospital in the rural region of Alentejo. This province occupies a third of the area of Portugal, but just 700,000 people live here. That is 22 people per square kilometer. Here, in the country's interior, around 150 kilometers from Lisbon, Prof. Lino is cooperating with Siemens Healthineers in a Value Partnership to develop one of the most modern and innovative interventional cardiology centers in the country. Thanks to the Value Partnership between them, the integrated cardiovascular center in Évora not only boasts telehealth solutions and consulting services for process optimization, but also the latest imaging technologies. This meant that Prof. Lino and his team could perform transcatheter aortic valve implantation (TAVI) on Francisco. The procedure involves implanting an aortic valve into the beating heart via a catheter and without general anesthesia. HESE has the only cath lab in the south of Portugal and outside of Lisbon that can use this minimally invasive technique in heart surgery.

TAVI is an innovative technology and procedure that Francisco could trust. He says he felt that he was in good hands even before the intervention. Although Lisbon and Évora are relatively far apart, the available telehealth solution meant Francisco was in permanent contact with Prof. Lino's team even before he underwent surgery. Every morning for many weeks, he used the devices he had been loaned to record his weight, blood pressure, blood SpO2 levels, and heart rate. He then sent the data using a smartphone app to HESE, where three clinical staff members are assigned exclusively to evaluate patients' vital signs.



Country-wide renowned Prof. Lino enjoying a break in between TAVI procedures.



About Hospital do Espírito Santo de Évora (HESE), Évora, Portugal

- Public hospital
- 288 beds
- Primary inpatient care facility in the rural Alentejo region
- Largest but least populated region of Portugal
- Oldest population in Portugal, on average
- Cardiovascular disease is the leading cause of death in the region
- One of the most modern and innovative centers for interventional cardiology in Portugal with two cath labs
- Enhanced patient experience and outcomes through a telehealth program for remote care management
- Moving into brand-new building in 2023



The Integrated Cardiovascular Center of Alentejo CRIA is one of Portugal's few TAVI centers.

Confidence and security

"To begin with I needed the help of my son, Nuno. But the devices and app are very easy and intuitive to use," says Francisco. As a precaution, though, his wife Maria was always with him when he took and sent the clinical measurements. Whenever there was a deterioration in some key parameters, he received a call from a telehealth coordinator or his physician from Évora. "That gave me confidence and security," says Francisco. Remote care management of his health prior to the operation also made his everyday life easier.



Francisco and his wife Maria checking his vital parameters in the comfort of their own home before his TAVI procedure.

"Because of the remote care management program I didn't have to constantly go to my cardiologist or even to the hospital in Évora to check my health status, which I would have been reluctant to do during the COVID-19 pandemic."

Francisco Antonio Rosa, cardio vascular patient



Clinical staff at HESE supervising Francisco's data.

About this Value Partnership

- 8-year Value Partnership from 2018 to 2026
- Holistic cath lab management including maintenance, a flexible financial solution, and the delivery of technology innovations
- Doubling of the cath lab's capacity by modernization of the existing cath lab, and adding an additional one
- Introduction of new treatment options and increase of clinical capabilities
- Establishment of a telehealth programs for remote care management to improve access to care and patient experience

Workflow simulation for clinical process optimization



Potential reduction of average time spent in the cath lab



Potential reduction of waiting time

Regaining quality of life thanks to extended clinical capabilities

For Constança Pires, this dream is already a reality. In mid-August 2021, Prof. Lino implanted a new valve in her heart using the TAVI procedure. "After a few days I was fit again and I have since been able to lead a relatively normal life," says the 79-year-old from Evoramonte. She's a little annoyed with herself that she waited almost five years. "It got to the point where I could hardly leave the house, I had so little strength." Her garden with its olive and citrus trees lay untended. She and her husband Lúcio could no longer take care of it. Shopping and cooking were also difficult for her. For a long time Constança resisted a heart operation out of fear that her ribcage would have to be opened. However, when she had another dizzy spell in July 2021 and was told about the TAVI procedure and telemonitoring that was now available at HESE, she finally consented to the intervention.

Before and after the intervention, Constança's granddaughter helped her to collect her vital parameters and send it to HESE via smartphone. The remote care management had several advantages for her: She didn't have to visit the hospital regularly for preliminary and follow-up examinations during the COVID-19 pandemic, and it saved her a lot of time and money. Evoramonte, a small community of 500 people, is only 30 kilometers from Évora. Yet people living in the villages of the sparsely populated region are effectively isolated if they don't have a car. Intercity buses only run to Évora twice a day. "And a taxi for the return trip would have cost me 70€ each time," says Constança, who, as a former plantation worker, does not have a large pension. For her, telehealth is a blessing – both in health and financial terms.



Constança Pires and her husband Lúcio enjoying life again after the successful TAVI procedure supported by the remote care management program.



Constança can finally again appreciate Alentejo's beautiful nature.

About Value Partnerships

Siemens Healthineers Value Partnerships combine our strength in holistic medical technology management, operations management and consulting into a long-term performance-oriented engagement focusing on the creation of value. Our technology management services include asset and capacity analysis, technology optimization, multi-vendor technology management, and change management capabilities. With our sustainable consulting and transformation services as well as our future-proof design planning, we are well positioned to co-create a solution with and for you, which will generate clinical, operational, and financial benefits.

Siemens Healthineers Value Partnerships help you optimize operations today, expand with new capabilities tomorrow, and advance the level of innovation in your network.

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