

## Customer Story

# Breaking even in one year

Reaping clinical and economic benefits  
with a new Hybrid OR in Mexico

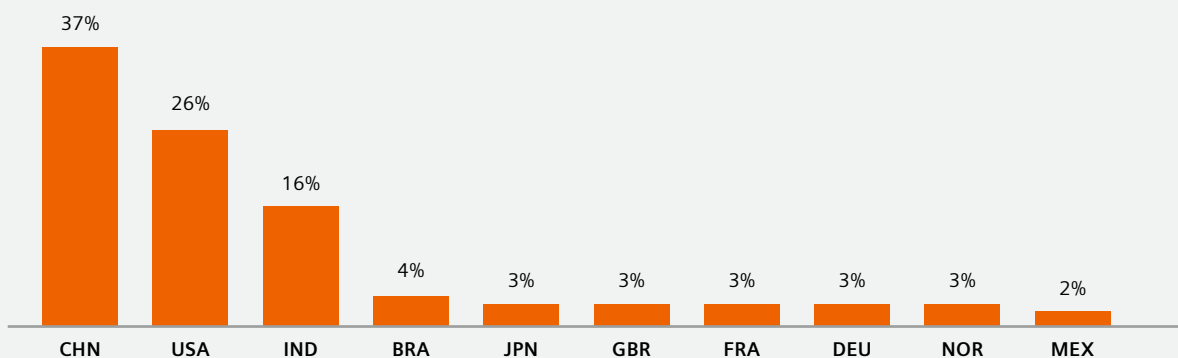
[siemens-healthineers.com/hybrid-OR](https://siemens-healthineers.com/hybrid-OR)



# With a new multidisciplinary-use Hybrid OR, Hospitales Puerta de Hierro Andares benefits from numerous clinical and economic advantages

Mexico is a country with enormous potential. It ranks among the world's top 10 countries in terms of expected healthcare spending by 2030. With a projected two percent contribution to the Healthcare expenditure forecast, it falls only slightly behind France, Germany, and South Korea. Much of this growth will be generated in high-end medicine, where the country still has a lot of gaps to fill. In 2021, less than 10 of the nearly 5,000 registered hospitals in Mexico had hybrid operating rooms. Considering the dynamics in Mexico, it can be expected that the increase in Hybrid OR numbers there will be much steeper than it has been in Western Europe and the U.S. in recent years.

## Contribution to Healthcare expenditure, growth of top 10 countries 2020 to 2030



Based on OECD GDP/Total HC Expenditure Forecasts (2030), Lancet Total HC Expenditure Forecasts (2030) and Siemens Healthineers Strategy extrapolations. Percentage of individual country growth to overall growth.



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**Omar Silerio**  
General Manager  
Hospitales Puerta de Hierro Andares, Zapopan, Mexico

## An investment that paid off quickly

One of the hospital groups at the forefront of this development is Hospitales Puerta de Hierro Andares, which has five facilities in western Mexico. When they installed a Hybrid OR with an ARTIS pheno in 2019 at the hospital, they had their largest specialty, cardiac surgery, clearly in mind. Omar Silerio, General Manager and cardiovascular surgeon Benigno Ferreira Piña, MD, saw the distinct benefits of the Hybrid OR in terms of reducing surgery time and improving patient outcomes in this area. Based on their performance data and patient numbers in cardiac surgery, Silerio and Ferreira estimated that it would take them five years to generate net earnings.

However, the outcome was even better than expected: They managed to break even in the first 12 months. Silerio explains the reasons for this development: "As we performed more and more cardiac procedures in the Hybrid OR and saw how versatile the room was, more specialties were added than planned. That accelerated our return on investment considerably." Today neurosurgery (including both brain and spine surgery), angiology,

algology, gynecology, thoracic surgery, and orthopedic surgery are also performed in the Hybrid OR along with the cardiovascular procedures.

The flexibility of ARTIS pheno and its integration with the other technology in the room also allowed the hospital to venture into highly complex procedures. "Our opportunities have expanded substantially, and the range of procedures we can perform in the Hybrid OR has also increased," says Silerio. "In fact, we already perform 30 to 40 percent more interventions than we'd expected in the fifth year after installation. So, growth for us has really been exponential."

## Setting the new gold standards

Ferreira points out the groundbreaking clinical transformation that the Hybrid OR has brought to his hospital and to healthcare in western Mexico in general: “Most cardiovascular procedures in Mexico are still performed as open surgeries, but the Hybrid OR has allowed us to increase the number of minimally invasive interventions such as minimally invasive cardiac surgery (MICS) assisted by video and images obtained by the ARTIS pheno system. We can now operate openly or minimally invasively with hybrid procedures, MICS or endovascular treatments in one session and in the same room. This has led to reduced procedure time, which means shorter periods under anesthesia, less tissue damage, and a reduced risk of infections. This has had an indirect impact on the length of hospital stays, thanks to better patient outcomes and shorter recovery times, and this has ultimately reduced hospital costs.”

After experiencing the benefits of Hybrid ORs in 2011-2012 during his fellowship at the Leipzig Heart Center in Germany, Ferreira was eager to bring this technology to his home country, where Hybrid ORs aren't widespread. With the knowledge he acquired in Germany and his experience with his own Hybrid OR, Ferreira and his colleagues are now setting the new gold standards in Mexico. This also includes improved workflows and in-team communication as well as the higher degree of standardization that comes with the deep integration of all medical technology in a Hybrid OR.



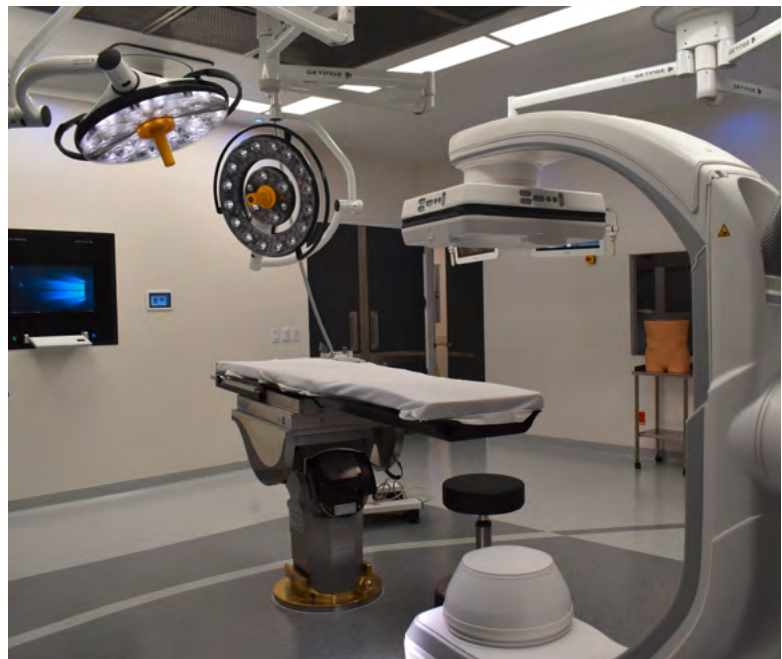
*“Siemens Healthineers helped us plan the room and communicate with all the other vendors. During the installation, they also coordinated everything. And then we had highly professional training that ensured that we could work efficiently in the Hybrid OR from day one.”*

**Benigno Ferreira Piña, MD**

Cardiovascular surgeon

Hospitales Puerta de Hierro Andares, Zapopan, Mexico





The Hospitales Puerta de Hierro Andares Minimally Invasive Hybrid Center combines a Hybrid OR (equipped with an ARTIS pheno) with a hemodynamic room (equipped with an Artis zee), where predominantly cardiac and neurological catheterizations are performed, to attend emergencies such as heart attacks or cerebral embolisms.

## Closer collaboration and greater efficiency

“A large number of experts are required in the room during a procedure,” says Ferreira. “For example, to handle the cardio-pulmo-bypass-pump and deal with the cell saver and the C-arm. Then there are the anesthesiologists and nurses as well as surgical technicians. All of them need a clear understanding of the workflow steps.” Therefore, the deep integration of the robotic imaging system from Siemens Healthineers with the surgical table from Getinge was vital. That’s why in the Hybrid OR the fluoroscopic images and scenes are transmitted to all large displays and integrated with Getinge’s Tegrís video distribution equipment. So instead of the surgeon being the only one who has a clear view of what’s going on in the surgical field, everyone can see it. This transparency allows for more efficient workflows and improves the team’s communication.

These benefits also extend to interdisciplinary use, as Ferreira explains: “I remember a case where one of our gynecologists joined forces with an interventionist to perform an embolization on a high-risk placenta accreta so the patient could deliver her baby safely. This procedure wouldn’t have been possible without the Hybrid OR – and that’s just one example of how different specialists have come together to perform safe and successful surgeries.” Ferreira is also confident that he and his colleagues will be able to perform more complex procedures in the future: for instance, interventions on the aorta and aortic arch using hybrid approaches and complex oncological thoracic surgeries, where thoracic surgeons work hand in hand with cardiac surgeons.

*„Hospitales Puerta de Hierro has always been using cutting-edge technology to increase patient safety. That’s why we invested in the Hybrid OR. Our team was unanimous about the Siemens Healthineers technology being the best option for our patients.“*

**Omar Silerio**  
General Manager  
Hospitales Puerta de Hierro Andares, Zapopan, Mexico



Hospitales Puerta de Hierro, Zapopan, Mexico

## A magnet for patients and staff

The Hybrid OR also increases the appeal of the hospital for patients and staff. Ferreira explains: “The innovative technology has helped us increase the catchment area of patients who come here for surgery. And of course it also has proven to be a real magnet for surgeons. We were just able to hire a promising new colleague who’ll perform structural heart and valve surgery and was very keen to work with our high-end technology.”

For Silerio, the large investment in the Hybrid OR has more than paid off: “We expected that the advanced technology would allow us to provide safer and more innovative procedures for our patients. But we also conducted a thorough financial analysis. We knew that we share a strong dedication to patient safety and improved patient outcomes with Siemens Healthineers, but we also found that they gave us the best offer in terms of costs vs. benefits. And since installation, the Hybrid OR has exceeded our expectations both financially and clinically. It has strengthened our reputation in Mexico as a leading hospital for national and international patients.”

The statements by Siemens Healthineers' customers described herein are based on results that were achieved in the customer's unique setting. Because there is no "typical" hospital or laboratory and many variables exist (e.g., hospital size, samples mix, case mix, level of IT, and/or automation adoption) there can be no guarantee that other customers will achieve the same results.

The customers are employed by an institution that receives financial support from Siemens Healthineers for collaborations.

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The opinions expressed in this article are solely those of the featured physicians and may not reflect the views of Siemens Healthineers.

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