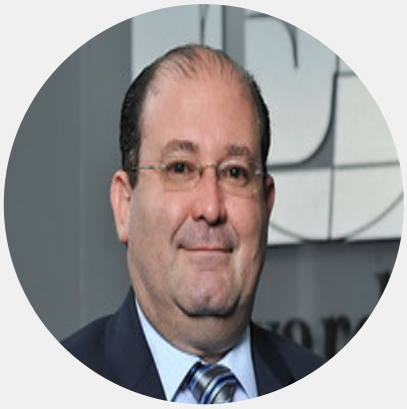
Manuel Palma – Plant General Manager, Edwards Lifesciences Puerto Rico



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Añasco, Puerto Rico, since 1972. Manuel Palma, general manager, explains the importance of the Añasco plant for Edwards' global supply chain, and his modernization and vertical integration strategy to position the site as a centre of excellence for materials science and machine & automation engineering. Moreover, he talks about the crucial role the site played for recovery efforts during Hurricane Maria, and what makes Edwards the best place to work in Puerto Rico.

Edwards Lifesciences has been manufacturing in Puerto Rico since 1972. Could you start by introducing our international readers the manufacturing footprint of Edwards on the island?

Edwards Lifesciences is the global leader in patient-focused innovations for structural heart disease and critical care monitoring, and the company develops and manufactures transcatheter aortic heart valves, surgical heart valves, transcatheter therapies for mitral and tricuspid valve repair and replacement and critical care technologies. This plant mostly manufactures products for Critical Care, representing approximately 18 percent of the company's global revenue. The products from Critical Care are manufactured at two locations, one in the Dominican Republic and the other here in Añasco, Puerto Rico. We are a global facility and our products are exported around the world.

The Añasco site’s flagship product is the Swan-Ganz pulmonary artery catheter (PAC), named in honour of Jeremy Swan and William Ganz who invented the device in 1970. Pulmonary artery catheters used with a cardiac output monitor revolutionized hemodynamic monitoring in critically ill patients by allowing direct, simultaneous and continuous measurement of flow, pressure, and oxygen delivery and consumption, giving clinicians a comprehensive view of their patients’ cardiac function and helping guide treatment decisions. Before the introduction of the Swan-Ganz catheter, patients had to be catheterized in special surroundings, with X-ray images to guide placement, and not at their bedside. Swan-Ganz catheterization was quickly adopted by the medical community and, almost 50 years after its invention, it remains the standard to monitor blood flow and heart functions. It has not been replicated by anyone. All Swan-Ganz PACs used in hospitals throughout the world are produced at this facility. In the United States, they are used more than one million times a year. Besides Swan-Ganz catheters, we also produce oximetry central venous catheters and the Fogarty arterial embolectomy catheters, a device developed in 1961 by Dr Thomas J. Fogarty to remove fresh emboli in the arterial system.

You became GM of this plant in June 2017, a few months before Hurricane Maria hit the island. How did you deal with this unprecedented situation?

Structurally, the plant only suffered minimal damage. Our business continuity plan proved to be well designed and we were able to provide for our needs thanks to preparations like our power generators, water tanks, and safety stock of raw materials. We did, however, encounter issues in receiving some supplies due to challenges with the lack of phone and internet communications.

We initiated our stabilization process within two or three days after the hurricane and were able to start back operations in less than a week. Then we scaled up production in different parts of the plant until resuming full operations. As a result, there was no disruption in supply, no backorders. The first product was delivered two days after to the San Juan Hospital hand-carried by one of our employees on a pickup truck. When all the transportation channels, the ports and airports, were reestablished, we resumed regular shipments for use in patient care.

In the aftermath of the Hurricane, this site turned into a recovery command operations centre for the region. This location became the first response point where the leaders from all the plants around us as well as the municipal officials congregated to organize recovery efforts. Even the governor of Puerto Rico visited us. The first thing we did, was to account for the condition of our employees. We did a tally of all our employees and made sure they were safe, as well as their

families. Food rations, water and other supplies that FEMA brought to the region were delivered to Edwards and all our employees were in charge of delivering it to the community with the help of Federal and Municipal support. We also had supplies coming from our facility in the Dominican Republic, which provided necessary supplies for our employees. In addition to helping our employees and the community, we also helped other plants start-up operations by sharing what we had with other companies.

Besides dealing with the aftermath of Maria, what have been your priorities since taking over in 2017?

As you mentioned, this plant, not only the physical facilities but also some processes, date back from 1972. One of my priorities has been to modernize our operations by adding more technology and automation. My second priority has been vertical integration. We learned that there are processes that we prefer to keep in-house to retain control. For instance, we increased our injection moulding capabilities. Our modernization efforts have allowed us to increase throughput and quality.

Looking at the macro environment, Puerto Rico has arguably lost some of its attractiveness as a manufacturing hub compared to other locations such as Ireland and Singapore, as well as the Dominican Republic and Costa Rica closer to Puerto Rico. In your opinion, why should companies continue to invest in Puerto Rico?

Manufacturing activities that are more labour intensive tend to go to locations with lower labour costs. Even though labour costs are higher compared to low-cost locations such as Costa Rica and the Dominican Republic, manufacturing in Puerto Rico is still less costly than the US, Europe or Japan, with the same level of expertise and commitment. A major part of the competitive advantage of Puerto Rico lies in the high level of capabilities and expertise of the workforce acquired in 50 years of medical technology manufacturing. The level of education, preparation and qualification of engineers is top-notch. The engineers in our team are among the best engineers that I have seen and can rival the best engineers in the world. In fact, we export engineers to our HQ in California, and our machine design centre as well as the polymers materials lab employ local engineers and PhD who serve Edwards globally. The education system has evolved to prepare professionals to work in the highly regulated industry by adapting their curriculum in industrial engineering, chemical engineering, mechanical engineering and electrical engineering, to the

requirements of the industry. Most of our engineers graduated from the University of Puerto Rico (UPR) in Mayaguez, the largest engineering school located close to our campus. I studied engineering in the Dominican Republic, and I can see that here the curriculum is geared towards life sciences manufacturing. The labour is also highly skilled and qualified. Moreover, our location in-between the Americas means that we can easily export products to the US, South America and Europe.

With 30 medical device companies operating 70 manufacturing plants on the island, there must be strong competition for talent on the island. How do you make sure that this talent chooses Edwards?

Our voluntary turnover here is less than one percent because we care about our employees, we treat them equally with respect and provide them with good working conditions and competitive benefits. We have won the best place to work award every year since 2017. We are also committed to equality and diversity, with a well-deployed policy of inclusion. Women represent 60 percent of our leadership team. Within the overall workforce, we are close to an evenly split. As a result, we have won the prize for the preferred employer for women in Puerto Rico repeatedly.

What is your vision for Edwards when we return to Puerto Rico for our next report in 2024?

We are reinventing ourselves by upgrading our technical capabilities and infrastructure. The way we see it, this location could serve different business units within Edwards Global Supply Chain. This is the reason why we started our materials lab and machine design centre to give support to all the business units. We are seeking to bring more technologically advanced products to this site.

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