

SUCCESSFUL IMPLEMENTATION OF XILTRIX IN THE DIJLANDER IVF LAB



Customer: Margarida da Avó Ribeiro dos Santos

Company: Dijklander IVF laboratory, Purmerend

Industry: IVF/ART

Video: N/A

Product: XiltriX Monitoring and Alarm System

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In early 2021 The Dijklander Hospital opened its new IVF laboratory to the public. This newly built lab needed to be finished in the year that Covid-19 caused a pandemic. As head of the IVF lab, Margarida da Avó Ribeiro dos Santos needed to make sure the finished lab would perform well and would produce excellent results that could provide the best health care to the new patients. To keep control of the critical parameters, XiltriX was selected as the monitoring and alarm system. XiltriX made sure she could sleep well at night and would be notified in the event of a calamity.

The Story of Dijklander IVF lab

The IVF industry in the Netherlands is mature with over a dozen established laboratories with good

success rates. Building a new laboratory in this field is a daunting task. If the construction work has to be executed during a pandemic, it does not get any easier. When building an IVF lab, there is no room for error, because if something goes wrong the reputation damage is enormous.

This was the task Margarida da Avó Ribeiro dos Santos was challenged with when she set out to successfully build and run the Dijklander IVF lab. Having no previous experience in building an IVF lab from scratch or managing a complex project like this, she was faced with a steep learning curve in which she had to overcome communication issues and Covid travel limitations.

Having worked with XiltriX in other IVF labs before, Margarida had great trust in XiltriX and selected XiltriX as her supplier for the critical monitoring and alarm system. It needed to make sure all temperature, cryogenic parameters, CO₂, alarm conditions and power outages were continually monitored, and alarm notifications sent to the appropriate people in case of a calamity.

Challenges overcome during implementation

The first major challenge in the lab's design process was to get the stakeholders from the departments involved to communicate and work together efficiently. The project needed competences from many different departments ranging from the technical department to the IT department, equipment suppliers, building engineers, lab staff and accreditation staff. Every detail needed to be determined up front.



Margarida da Avó Ribeiro dos Santos
Head of the IVF lab

Margarida commented: *"Even though all team members were very helpful, it was clear that none of them had experience in running an IVF lab. It was sometimes difficult to convince people that my technical design requests had an important added value to efficiency and quality of the IVF lab and the viability of the embryos."*

Another challenge was integration of the different devices into the monitoring solution. Margarida selected the CryoFill cryogenic controller for her gamete and embryo bank and the K-Systems G210+ benchtop incubator for embryo culture. These devices are the most advanced the market currently has to offer and XiltriX partners with these companies to provide a seamless monitoring integration.

Margarida noted: *"During the lab's design and implementation phase we had to take a flexible model*

into account. The labs will expand over the years, so all solutions have to cater for that growth. We worked together closely with the XiltriX team in finding the best technical solution for both monitoring and workflow in the lab. XiltriX hardware were placed in a separate cabinet outside of the lab, so maintenance does not disturb the IVF lab activities."



The most difficult challenge to solve however, was the IT integration. A hospital requirement was the integration of the monitoring server into their virtual environment. Understandably, Dijklander hospital has extensive requirements and stringent security regulations. This is necessary to adhere to both GDPR and ISO-27001 legislation and always keep the network safe. Integrating the XiltriX server solution into this environment was the most time-consuming part of the process. The XiltriX system needed to be securely accessed not only from inside the lab, but also from home, outside of office hours.

A close cooperation between the XiltriX and Dijklander IT-team resulted in a secure working software solution with a maintenance, update and test path clearly defined up front. This way of operating not only ensures XiltriX functionality at the time of installation, but it also guarantees that the system will keep on performing correctly after software updates and upgrades.

Margarida observed: *"The IT integration process was the most difficult to oversee, since I had no technical knowledge or control over it. The strict security policies do not always allow for the easiest or most*

user-friendly solution. This was not just a challenge for XiltriX, as it affects all software systems. Finding a workable solution within the limitations proved to be a major challenge."

Why Dijklander IVF Chose XiltriX

Before working at Dijklander IVF Margarida gained experience working in the Reinier de Graaf Group IVF center where she worked with XiltriX. Working at Care Fertility in London she also worked with a different monitoring solution.

Margarida commented: "The XiltriX system has proven its value to me over the years. It offers security and reliability. In comparison to other systems, I worked with, it is easier to setup from a user's perspective. Furthermore, being able to capitalize on the broad experience of the XiltriX team in other IVF labs has proven instrumental for this project."



How Dijklander IVF uses XiltriX

Margarida uses XiltriX to monitor all critical parameters in the lab. This ranges from fridge and incubator temperatures to nitrogen and temperature levels in the cryogenic vessel. Before being able to use any of this, the lab defined and executed strict validation protocols. All critical systems had to go through an IQ and OQ process in which their installation and operational efficacy was determined

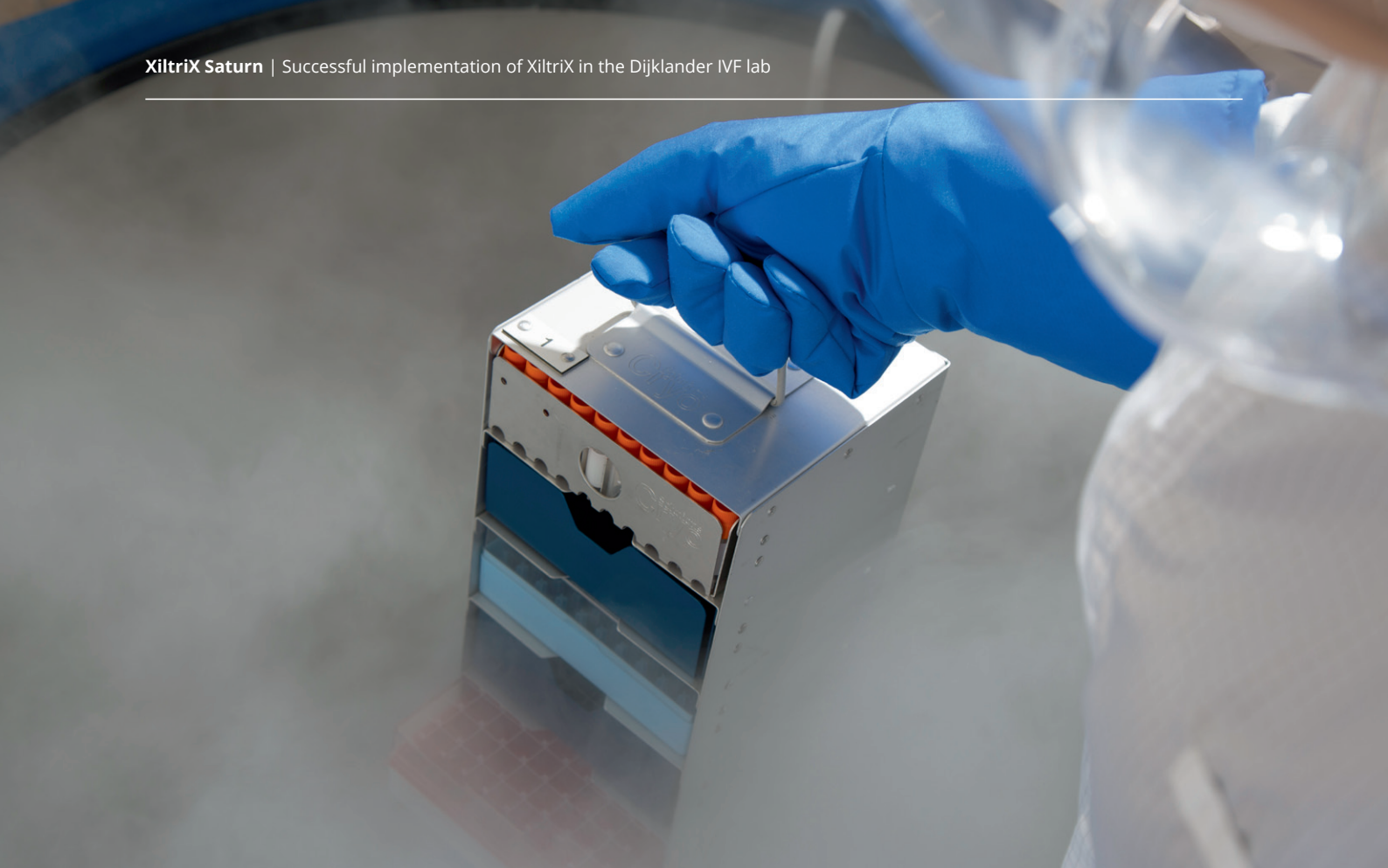


and properly documented. Finally, the lab performed the Performance Qualification themselves.

Margarida commented: "During the validation phase of the laboratory equipment XiltriX has already proven its value by identifying an incorrectly working incubator before this was used to grow embryos. We ended up having to send the incubator back to the manufacture for revision. By using XiltriX we are able to control the performance of our critical equipment at all times."

During this design and implementation process, success was not always instant or automatic. When the lab opened there were so many things that needed attention, fine-tuning the XiltriX software was not something Margarida had time for. She then requested a number of remote sessions in which XiltriX specialists assisted her in setting up the system to fit her own workflow and team demands.

Han Weerdesteyn CCO of XiltriX commented: "The input of customers is invaluable to XiltriX. Customers like Margarida drive our company to provide a better service every day. We already have implemented the lessons learned from this project and have revised our procedures to better fit the needs of the IVF customers. The added value of the XiltriX team is the ability to bridge the technology gap."



The Results

Having successfully finished the rigorous testing and validation procedures, it was finally time to start performing the IVF procedures and culturing actual embryos. The first results were spectacular with 100% success rate. This result means no major errors were made in the design of the laboratories.

Margarida noted: "I am convinced that the success rates our team has already achieved are not down to sheer luck alone. A successful IVF pregnancy can only be achieved if all parts of the procedure work at optimum efficiency. Implementing additional features like VOC filters will surely have contributed to this success."

The lab has now been operational for several months. In this period of time Margarida has already identified points in which control in the total process can be improved. For example the seasonal variations of weather conditions can have an impact in the performance of the laboratory facilities, which puts the system to the test.

Margarida observed: "Having insight in additional parameters like room temperature, relative humidity and VOC values will not just allow me to better follow the performance of the lab, but also communicate deviations with the technical staff. Monitoring and logging of this information on XiltriX allows me to build up a performance profile of the lab during any period of time."



Would you also like to have support in setting up an IVF or other type of laboratory?
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