

PRINT-OSF Innovation sets the table for a solution to prevent cancelled surgeries

Eight years ago, two surgery nurses at [OSF HealthCare Saint Francis Medical Center](#) in Peoria were approached about a big problem that cost their hospital several million dollars a year in lost revenue – cancelled surgeries. An anesthesiologist approached surgery nurses Jill Teubel, MSN, BSN, RN and Mary Marvin, APRN, MSN, RN to see if they had a way to prevent cancelling surgeries because of overlooked implanted medical devices.

Hundreds of surgeries each year at OSF Saint Francis were being cancelled or delayed because patients had implanted medical devices with electrical components, such as pacemakers to regulate the heart and spinal stimulators to suppress pain. Without the devices temporarily turned off during surgery, patients and the devices could be harmed.

Jill Teubel says surgeons needed to know, in advance, how to disconnect specific devices.

“With that comes some pretty specialized directions when you come in for a procedure. Those are usually hidden and so it’s very difficult to find those.”

Teubel and her colleague, Mary Marvin, set out to create a spreadsheet to list every implantable medical device on the market with model numbers, surgery instructions, even contact information for the device sales rep who - in some cases - would have to come on site prior to the planned surgery.

Teubel and Marvin often spent their personal time researching, documenting and regularly updating the information in a matrix they called *Device Table*.

Marvin says the effort was worth it because cancellations related to implanted devices were reduced from more than 500 to being nearly eliminated at Saint Francis Medical Center.

“Doing all his work upfront, we save the patient the misfortune of being cancelled. A lot of times the patient’s family will come in to be with them; to take care of them after the case,” Marvin explains.

“If there’s a cancellation and it doesn’t get re-scheduled for another three weeks, then their family member has already used their vacation time and they have no one to take care of them after the surgery.”-Mary Marvin, Advanced Practice Registered Nurse, Surgery

Their *Device Table* document was laminated and attached to surgery carts. Over the years, it expanded from two pages to 80. Teubel and Marvin knew they needed something more manageable, so they pitched their idea to the [OSF Innovation Studio](#), a part of [OSF Innovation](#).

Kip McCoy, vice president, OSF Innovation Studio says his team initially built an Access database that could be more easily updated. But after learning there were no other solutions in the marketplace, the Studio team realized it needed additional expertise to more fully develop a scalable and potentially commercial product.

A Peoria-based company [Enoch Collective](#) worked with the Innovation Studio team to create, test and revise a web application that could be expanded and customized to meet the needs of the surgery team.

With an added ability to connect to [Epic](#), one of the largest electronic medical records software systems in the country, Teubel expects to see the software commercially licensed.

"It was a solution we solved for our surgery area, and it's been neat to work with the physicians and staff. For them to come back to us and say, 'This really helps us. We use this all the time,' that's really satisfying because as a nurse, you go into the profession to help people."

Lasting impact on patients and safety

Marvin relishes the idea of having a lasting impact by sharing their labor of love.

"The thought that someday someone in California or New York could be protecting their patients by utilizing our app is something that is very special to us because as nurses, taking care of the patient always comes first."

The Innovation Studio team helped support a patent application. Approval can take between two to four years. In the meantime, the women are joining forces with a former member of the Innovation Studio team to form a new startup company, *OpenSurg*, to further develop, scale and eventually market the software that now also includes information on 1,200 devices used in outpatient procedures.

Senior Vice President for OSF Innovation, Becky Buchen says this spin-off company shows the benefit of leveraging the talents of frontline workers and then having a system in place to help Mission Partners (employees) explore development, testing and possible commercializing of their idea.

"When you really start to leverage the ideas they have, because they're at the frontline of care, they're seeing the challenges being faced every day, whether it's by our patients or their fellow Mission Partners (employees), and then bringing forward those ideas really starts to advance that innovative culture."

In preparation for the results of creating an innovative ecosystem, OSF developed an intellectual property policy in 2018. It provides the opportunity for revenue-sharing for intellectual property created by Mission Partners through the course of their employment. OSF HealthCare and *OpenSurg* recently signed a comprehensive licensing agreement.