

Pediatric doctor works to fill void in children's surgical devices

BY MARY DUAN

One of the most common pediatric surgeries is hernia repair. And one of the most common instruments used in that surgery is a kitchen spoon.

The kitchen spoon is a "garage technology" kind of solution, and an elegant one at that, said Lucile Packard Children's Hospital surgeon Dr. Sanjeev Dutta.

The reason surgeons throughout the years have turned to the spoon is because the proper instrument simply doesn't exist. It's a problem that Dutta, along with colleagues at Menlo Park-based SRI International and two other hospitals, are taking on.

If the outcome of their efforts is successful, a new generation of surgical instruments could be produced.

SRI, a nonprofit research-and-development organization, announced in July that its collaborative with the Institute for Pediatric Innovation was awarded a \$1 million grant by the U.S. Food and Drug Administration to commercialize medical devices for pediatric care.

The collaborative, called MISTRAL, for Multidisciplinary Initiative for Surgical Technology Research Advanced Laboratory, includes IPI, Lucile Packard, Cleveland-based University Hospitals Rainbow Babies and Children's Hospital, and Children's Mercy Hospital and Clinics in Kansas City.

The collaborative will focus on identifying new medical devices specific to the newborn intensive care unit.

SRI declined to say exactly how much money the organization is putting toward the Mistral project. In 2009, SRI's consolidated revenues, including its wholly owned for-profit subsidiary Sarnoff Corp., were approximately \$470 million.

Lucile Packard spokesman Robert Dicks couldn't provide an exact amount of funding but said between Lucile Packard Foundation for Children's Health and the Stanford University department of surgery, support for the collaboration was in excess of \$400,000.



VICKI THOMPSON

IMPROVING PEDIATRICS: Sanjeev Dutta is a pediatric surgeon leading the collaboration between Lucile Packard Children's Hospital and SRI to develop surgical instruments for pediatric surgery.

Right device for surgery

Dutta said children are the "orphans" of the medical device industry because market and regulatory concerns can prevent medical device companies from investing in products specifically for pediatric surgery. The end result has surgeons routinely using adult surgical instruments or jerry-rigging their own solutions.

He said this collaboration boils down to expertise. He and his colleagues have ideas for instruments they'd like to use, but they don't have the expertise to build them. SRI engineers, however, can design and make an infinite number of devices, but don't necessarily know what a pediatric surgeon needs.

"It's like when peanut butter and chocolate bumped into each other and made a Reese's Peanut Butter Cup," Dutta joked.

The idea came about when Dutta approached SRI Principal Engineer Pablo Garcia with an idea around robotic surgery for children. But Garcia said once they started examining the high-end medical technology,

they realized it didn't solve important problems.

"We started talking about surgical devices that technically speaking aren't as complex, but have a greater impact," Garcia said.

The group focused on some of the unmet needs, turned them into proofs of concept and then "put it on a silver platter for a company to take it forward," Garcia said.

The team is working on developing the early stages of those commercial relationships now.

SRI is establishing a venture-philanthropic program called the Pediatric Device Fund to support development of products that might not have a large market but can provide significant clinical benefit. Dutta said any money made from development of new tools likely will be reinvested in the venture, although at some point the researchers might see equity or royalties from a successful development.

"We're not in this to make a gazillion dollars," he said.