

The greening of the operating room

San Rafael company creates plant-based skin stapler

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With the creation of what is believed to be the first plant-based medical device, a San Rafael-based company is hoping to reduce the amount of trash that comes out of operating rooms, and help to bring the health care industry in line with environmental sustainability.

NewGen Surgical Inc. (newgensurgical.com), a developer and manufacturer of sustainable single-use medical products, has received a patent for the NGS35W Skin Stapler which was commercially released in September.

“The health care industry is a huge, prolific producer of waste,” said Rob Chase, founder and president of NewGen. “We’re one of the few, if not the pioneers, in the sustainable medical product line to green the operating room. There will be less plastic pollution when using the stapler, and for many hospitals that are increasingly focused on green operating room initiatives and environmentally preferable products, NewGen Surgical is committed to developing a number of future products to help offset the negative environmental impact of single-use devices.”



Rob Chase

Skin staplers are one-use, disposable devices widely used by physicians, general surgeons, and gynecologists. Approximately 18 million single-use skin staplers are disposed of each year. In the U.S., hospitals produce approximately 16,000 tons of waste per day, with 30 percent of that coming from the operating room.

NewGen’s skin stapler uses the same standard stainless steel industry staples surgeons are familiar with for routine skin closure, but instead of plastic it is made of almost 70 percent plant-based material and a 67 percent reduction in energy used for production, so less plastic produced and discarded.

NewGen was started in 2012, and the

company spent more than two years designing the product, with a focus on clinical performance, while not having to charge a premium price for a sustainable product.

Chase has an MBA and a certificate in a sustainable practices program from Dominican University of California in San Rafael. He also has more than 20 years in the medical device industry, and eventually he began to notice the health care industry lagging behind other industries in sustainable practices.

The challenge was to redesign single-use medical products that are used by the millions in operating rooms.

“How do we make it so it’s good for the planet too?” Chase said.

The stapler is made using the byproduct of sugarcane, a fibrous material called “bagasse,” which is upcycled materials left over from harvesting sugarcane, which is sustainably farmed in Thailand.

Design and development takes place in San Rafael, the device is produced in Fremont, and parts are made in Connecticut. As the device was just rolled out last September, Chase estimates thousands have been produced, and by the end of the year that number will increase to more than 100,000.

“We’ve been trying to utilize North Bay talent through the development to support local economy,” Chase said.

Future products will also focus on supplanting single-use plastic products and those that can be reused.

“We are pleased with the NewGen Surgical intellectual property that was issued and feel this is indicative of the



NewGen Surgical Inc.'s NGS35W Skin Stapler, made from plant-based materials.

hard work and talent of our product development team,” said Dr. Barry Gardiner, Medical Director for the stapler. “NewGen Surgical’s commitment to developing and manufacturing sustainably designed, single-use medical devices is meeting a demand in the market that is clearly growing.”

Feedback on the new stapler has been positive from operating room staff and physicians, Chase said. Many appreciate the clinical performance while also using a single-use product they can feel good about.

“This is something, as a surgeon, that is an easy change to make that will reduce waste in our environment,” said Dr. Barry Gardiner.

NewGen Surgical is a member of Practice Greenhealth’s Greening the OR initiative and was commended in the 2015 Circular Economy Awards. They also won the Health Care-Medical Tech 2015 category at the seventh annual North Bay Innovation Summit.