

How Did a \$60 Bra Save 274 Hospital Days and \$751,000?

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Lauren Zobec, RN, and Sarah Duarte, RN knew there was a problem. The cardiovascular (CV) nurses at Saint Joseph Hospital in Denver had noticed a string of open-heart surgery patients being readmitted for sternal wounds and pressure wounds.

They identified a common thread through the cases: all involved patients with large breasts.

“After patients have open heart surgery, there is a big risk if they have larger breasts that it pulls on the sternal incision, especially when they’re laying down sleeping at night,” Lauren explained. “The breast tissue can pull the sternum apart, so if they’re not wearing breast support 20-24 hours a day, that breast tissue will pull apart the incision.”

These sternal wounds are painful and require lengthy, extensive in-patient treatment.

“When they have sternal wounds, they’re huge. They take debridement, wound vacs, and weeks of IV antibiotics,” Lauren said. “So, these patients are here for extended stays and multiple admissions.”

One patient stated she wouldn’t have gone through the surgery had she known how painful her pressure wound would be. “This wound made a hard surgery 100 times harder.”

That patient also gave them a clue to the culprit. Her post-surgery recovery bra

was uncomfortable and too small.

Sarah and Lauren looked at the post-surgical bra that’s standard across most hospitals and found it’s made of uncomfortable polyester that doesn’t breathe or stretch well. The bra’s hook-and-eye closures are difficult for people with dexterity issues and can’t quickly be opened in an emergency. And the largest size is simply too small for patients with large torsos and/or breasts.

Some patients weren’t wearing the bra, and some who *were* wearing the bra were developing pressure wounds on the sides of their torsos.

Sarah and Lauren asked the Saint Joseph Clinical Research Library to perform a literature search focused on products in use to meet this need, turning up a hospital in the United Kingdom that had experienced similar patient issues. The hospital designed their own post-op bra and saw their sternal infection rates drop by half.

“There’s no way they’re going to let me import bras from the UK. So, what can I find locally that has the same characteristics that would get us the same results?” Lauren said.

They found a bra designed by a former radiation oncologist. Although it was intended for post-mastectomy surgery, the bra checks all the boxes: soft, flexible, breathable material with a Velcro front closure and sizing up to 6X.

The new bra’s cost (\$60) was comparable to the existing one, so Lauren and Sarah worked with materials management to stock the Saint Joseph Cardiovascular floor with the improved product. They also developed a patient education sheet explaining proper use for optimal recovery. Finally, they launched an improvement to pre-op, measuring patients prior to surgery to ensure the best fit.

Saint Joseph Hospital began using the improved bra, education, and pre-op process in September 2023 and since then zero women who had open heart surgery have been readmitted for sternum or pressure wounds. It is estimated this change has eliminated 274 additional hospital days due to wounds and has saved about \$751,000.

“Overall feedback from patients has been very positive. Impact on subsequent issues is quite astounding!” said cardiothoracic surgeon Dr. Jess Joymon, MD.

One patient reported: “When they told me I had to wear a bra post-op – I was a little disappointed as it did not sound comfortable. I woke up and had this pink bra on. Honestly, I didn’t even know I was wearing one! It was so comfortable.”

Surprisingly, the research didn’t indicate that hospitals in the U.S. have adopted this solution for CV patients.

“I’ve been a CV nurse for 18 years and we’ve always had just that one bra that looks like it hasn’t changed since the 70s. I think it’s just the product we had, and nobody ever thought about doing anything differently,” Lauren said.

Changing to a better product is a matter of patient quality, experience, and equity. “This was a very painful problem being experienced by women, and in particular by women with larger bodies,” Sarah said.

Lauren is passionate about spreading the improvement as far and wide as possible. “It’s the patients. It’s the women. We’re here to help them and I want to get this everywhere because I think it’s important and it’s the right thing to do for these women,” she said. ■