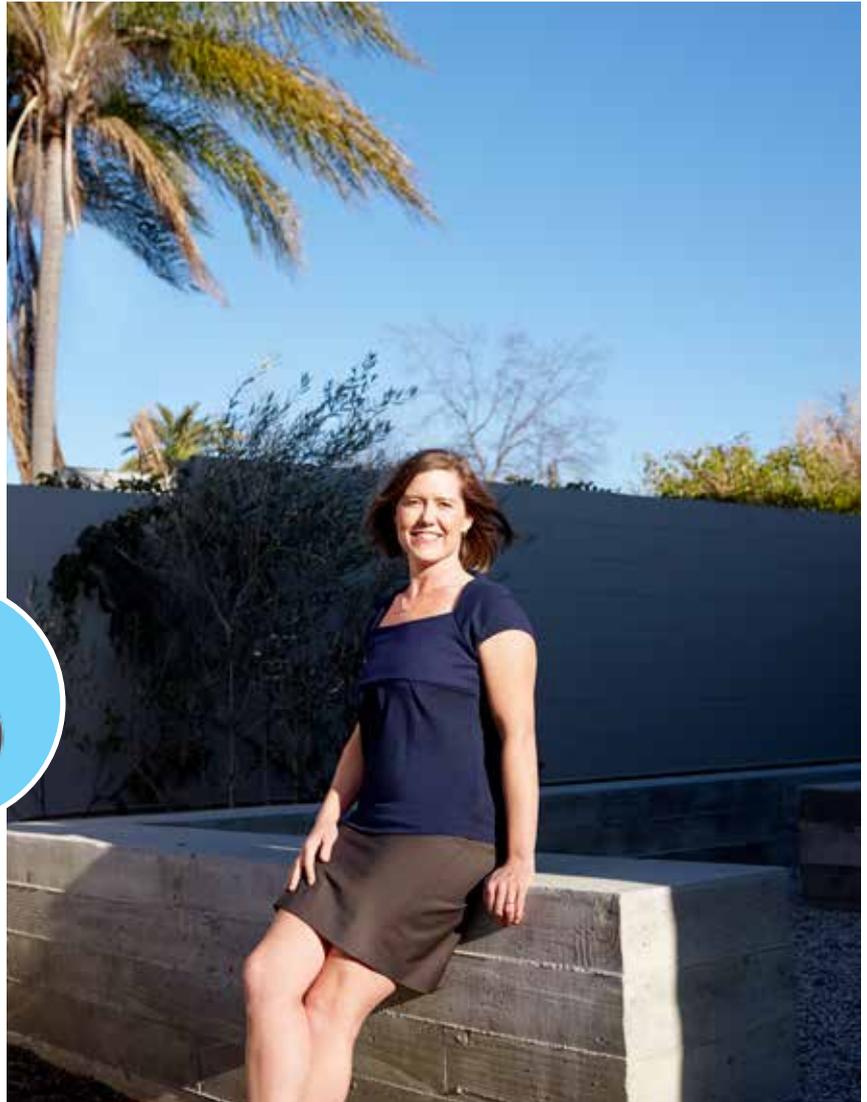


Failure was not an option

Pain specialist Amy Baxter couldn't protect her own son from the distress of injections. So she invented a device that would do the job

BY JILLIAN KEENAN

>> Despite its kid-friendly appearance, Buzzy's biggest fan base is adults facing needle-reliant treatments.



In January 2010, Dr. Amy Baxter, 44, a pediatric emergency physician and pain specialist, received an unexpected visit at her Atlanta home from a woman named Karen Mae Sledge. Sledge had found Baxter's address on the Web, she explained, and assumed it would lead

to an office building, not a family home. Then Sledge handed Baxter a basket of presents. "I just wanted to thank you for helping my dad," she said. "He was about to stop dialysis because he found it so painful." But Sledge had given him the revolutionary pain-reduction device that Baxter had invented, and it enabled him to manage his lifelong needle phobia. Her father agreed to continue with the treatment.

For Baxter, who as a child used to sit outside her home hoping that an injured person might pass by "so I could jump in with my Band-Aids and save the day," Sledge's story was deeply gratifying. Initially, Baxter invented Buzzy (buzzy4shots.com) to help kids bear their immunizations. "But this visit was the first time I had an inkling that there were other people who might need Buzzy more than kids getting shots," she says. >>

>> During the start-up phase, Baxter and her staff worked out of the basement of her Atlanta home, aka "the hive."

The gadget, about the size of a computer mouse, looks like a large plastic bee. A gel pack is attached to the underside of the bee, and right before getting a shot, you press the frozen pack against your skin a few inches from the injection site. When the device is switched on, Buzzy gently vibrates. Like magic, the area goes numb and you feel the needle much less. “The sensations of cold and vibration desensitize the nerves, thereby dulling or eliminating the pain from the shot,” Baxter says. “The concept is based on gate-control theory. The neural pathways that transmit pain can only process so much sensation at one time.”

Baxter knew that Buzzy could help children, who now get up to 30 vaccines before age 18. But after Sledge’s visit, she started receiving reports about adults using the device—for fertility shots, IV insertions, diabetes injections, arthritis treatments, even tattoos. In 2009, the year the first Buzzys were sold, at \$34.95 each, Baxter grossed \$56,000. Today her sales are nearing \$1 million, and adults are her biggest market. About 500 hospitals and 1,500 clinics nationwide now use Buzzy.

Baxter’s war against injection pain began in 2001 when she took her son Max, then four years old, to the doctor for his vaccines. Baxter had devoted years of her career to pain research, so she thought she was uniquely equipped to help Max through the ordeal. “I had topical anesthetic creams. I had a box of cold juice for him to drink right at the moment of getting the shots. I had a book with hunt-and-find pictures to distract him,” she says. “I told him what to expect. He was prepared and ready.” But things didn’t go well. Without warning, a nurse plunged the needle into Max’s arm. He didn’t cry or say a word. Then, as they left the doctor’s office, he vomited all over the floor.

“After that, every time we had to go to the doctor, he would get physically ill,” Baxter says. “There I was, a pediatrician and pain specialist, and I couldn’t even protect my own kid. What were other parents going to do?”

At first, she was angry with herself for her inability to shield her son from the traumatic experience, but gradually her anger turned into a determination to find a better way.

Knowing that cold water could numb pain from burns, Baxter began to experiment with inflatable cuffs and other devices that used water. Nothing worked. Then one morning in 2004, Baxter drove home after an exhausting overnight shift in the emergency room at Children’s Healthcare of Atlanta Scottish Rite, the hospital where she worked. The wheels of her car were out of alignment, causing the steering wheel to vibrate. As she pulled into her driveway, her sleep-deprived brain registered a career-changing fact: The vibration had numbed her hands. Baxter ran inside, grabbed a black-and-yellow personal massager and a bag of frozen peas and asked Max to sit down for an experiment. She pressed the frozen peas against his arm with the massager, switched it on and pinched his skin a few inches below the vibrating massager. He didn’t feel a thing. Then she tried the combo on her two other kids. It worked so well that they didn’t even feel a pinch hard enough to leave a small mark. “That was my eureka moment,” says Baxter. Her husband, Louis, drew a cute little bumblebee face on the massager, and Buzzy was born.

Though Baxter put in 80 to 100 hours a month in the ER and devoted 40 additional hours to research and lecturing at pain-management conferences, she spent every spare moment trying to develop a prototype by experimenting with motors from old cell phones donated by friends and neighbors. “It was an invigorating hobby,” she says. “I was having giddy fun smashing things and wiring things up.”

In 2007, Baxter applied for, and received, grant money to do a controlled scientific study. She named her business MMJ Labs, after her kids—Max, now 15; Miles, 13; and Jill, 11—and planned to sell or license the concept once she had the research to support it. But she still lacked a prototype. The coin-shaped cell phone motors didn’t

Running the numbers

\$200,000
How much money Baxter borrowed to start her company

4
Age, in months, of youngest person from whom Baxter received a thank-you letter

79
Age, in years, of oldest person who sent her a thank-you letter

14
Number of prototypes Baxter built

116
Number of hours Baxter spent on her NIH grant applications (the first one was turned down)

9
Number of bee-related puns Baxter and her employees use “all the time,” she says

work properly; she needed a cylindrical motor. In January she met with a group of young engineering graduate students at Georgia Tech who sometimes collaborate with small businesses to solve real-world design problems. As she described her quest for the perfect cylindrical vibrating motor, they started to laugh. To them, the answer was obvious. That afternoon, Baxter and two grad students headed to a sex shop in Atlanta’s red-light district. “I’d like to buy several vibrators,” Baxter told the cashier. “What do you have on sale?”

“Oooh, honey,” said the cashier. “I like the way you shop!” Baxter went home with nine vibrators. Two months later, she’d fashioned a 9-volt prototype. Her research, which would be conducted on 32 adult IV patients, began in March. By summer the results

were in: Buzzy reduced—or in some cases eliminated—the pain of IV needle insertions in every patient.

Then Baxter hit a wall. Every company she pitched on her idea wanted to make Buzzy disposable in order to increase profit margins. Baxter, who is so frugal that she built her first home-office desk out of old cardboard boxes, couldn't stand the thought of all that waste. And though she believed in Buzzy, she didn't want to manufacture the device herself. "I didn't know how to build a company. I felt like, 'Please don't put this burden on me. I don't want this responsibility. I don't want to fail,'" she says. "But it felt wrong to abandon something that could help people." Her husband finally gave her the push she needed. "How are you going to feel every time you hear a child cry and wonder if you could have done something to avoid that?" he asked.

fixed price. There's \$1,000 here and a couple of thousand dollars there, and things add up. Each of the prototypes we made cost \$1,000."

Several groups stepped forward with financial support for Buzzy, including the National Institutes of Health, from which she received a Small Business Innovation Research grant of \$1.1 million. In the summer of 2008, Baxter hired her first employee (she now has six), and in the spring of 2009 she celebrated the arrival from China of her first shipment of Buzzys. "I felt this stunned, chilled satisfaction of having created something that never existed before," she says. The first batch sold so quickly that by November she needed another 5,000 units.

The second time around, the shipment was riddled with defects. Some Buzzys had sickly greenish stripes, others had blurry or off-center eyes,

agency Physicians. That evening, sitting in her hotel room checking e-mail, she spotted a message from one of her employees. The subject line read, "Oh no." The Chinese factory she'd hired to make tote bags for the Buzzys had burned down—or so its owners claimed. The totes, for which she'd already paid \$10,000, had literally gone up in smoke. Despite interventions from both the Georgia Economic Development Office and agencies in China, she was never able to get the money back. Since then, Baxter has shifted all her production to the U.S.

Today, Baxter has fully transformed into the businesswoman she originally didn't want to be. She's on sabbatical from her medical practice and works full time on Buzzy. In the true entrepreneurial spirit, she doesn't dwell on setbacks and instead focuses on her customers, many of whom have filled

her home with gifts, tokens and letters describing how Buzzy changed their lives. One boy with a needle-phobic sibling wrote to Baxter to thank her for giving him his family back. An Australian woman who had all but given up the idea of having children because she couldn't tolerate the fertility shots posted a message on Baxter's Face-

book page (on Baxter's birthday), triumphantly announcing that Buzzy had made it possible for her to finally become pregnant. The face-to-face conversations with customers are especially meaningful. "After Karen Mae Sledge's visit, my employees and I felt elevated from being a small 'mompreneur' business to feeling as though we had a greater purpose," says Baxter. "If something happened to make Buzzy fail tomorrow, I would still be satisfied that I had made a difference." When she looked through the basket to see what Sledge had given her, one gift caught her eye: a bag of Life Savers. ✨

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 **"I didn't know how to build a company. I felt like, 'Please don't put this burden on me. I don't want this responsibility. I don't want to fail,'" says Baxter.**

Baxter and Louis took out a second mortgage on their home, and while still working full time at the ER, she started searching for an industrial-design company to refine her prototype. During this period of her life, she says, "I lost all pop-culture social currency. *CSI? Mad Men? Grey's Anatomy?* I never saw a single episode of any of those shows. The tiny details of running a business were overwhelming." Most design firms charge as much as \$100,000 to work up a prototype, but she finally found a company that would do it for \$12,000. "One of the people who worked there had children who were afraid of needles," says Baxter, "and they believed the product was important. But it's not like there's one

and a few buzzed so loudly that they sounded like chain saws. "One of the nurses at the hospital had a Buzzy from the second shipment," says Baxter. "It sounded like someone was using a jackhammer. Her eyes got really wide, and my eyes got wide, and there was a crowd saying, 'This can't be right,' 'This has been overhyped.'" Baxter and her employees had to go through all 5,000 Buzzys to remove the defective units. It then took three months of negotiations to get the company to replace them and put quality control procedures in place.

But that incident paled in comparison to what happened next. Baxter was in Las Vegas to deliver a lecture at the American College of Emer-