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Floshield helps to keep the laparoscope
lens clean and free of fog.
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3rd Place: Covidien's Duet TRS™
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2nd Place: Cardinal Health's ENDURA
performance surgical apparel.
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Keeping It Clean

Q & A: Wayne Poll, MD, CEO of Minimally Invasive Devices, Inc.

How a surgeon founded his own company to launch FloShield, a device that keeps the laparoscope lens clean, addressing a long-felt frustration in the OR and becoming *Surgical Products'* first ESP Award winner.

Wayne Poll, MD, is a minimally invasive surgeon and the Director of Medical Innovation for OhioHealth in Columbus, OH. He is also the creator of FloShield, a device that helps to keep the laparoscope lens clean and fog-free during surgery. Additionally, he can now add winner of the first annual *Excellence In Surgical Products Award* to his credentials. To develop FloShield, Dr. Poll founded Minimally Invasive Devices, Inc., and launched the product in August 2009. After seeing early market adoption of the device, Dr. Poll is leaving his practice in December to run the company as a full-time CEO. *Surgical Products* talks with Dr. Poll to discuss the winning ESP Award product, what it offers to laparoscopic surgeons, and the story behind how a surgeon with an idea started his own successful company.

Surgical Products: Can you discuss how the idea for the FloShield device evolved? What issues in the OR were you looking to address?

Dr. Poll: I've been in practice for 22 years and practicing laparoscopic surgery since 1992 when I performed my first laparoscopic Nephrectomy. My practice has been only laparoscopic and robotic surgery for the past four or five years. I also used to do a lot of teaching for Ethicon-Endo Surgery, traveling all around the country proctoring. I was in 70 operating rooms coaching other

surgeons, and I saw how much time the OR team wasted struggling with the lens getting dirty and having to remove it to clean. It just seemed that it was a waste of time and it caused an awful lot of frustration and anxiety within the OR team. When the lens gets dirty, surgeons operate through a diminished view because they are trying to reduce how many times they take it out. The un-met need was very apparent.



Dr. Wayne Poll founded Minimally Invasive Devices to launch FloShield.

Surgical Products: Why did you decide to start Minimally Invasive Devices to launch this product?

Dr. Poll: I have worked with big companies on devices before and frankly, found that model—the surgeon going to the big company—very frustrating. So I said, 'I'm bringing my next [device] to market.'

I contacted an incubator in Columbus called Tech Columbus that is designed to help budding entrepreneurs. With their mentoring and coaching, I was able to raise capital, attract a team, and develop and launch the device. It is unusual for a surgeon founding a company to take it through the developmental stages.

Surgical Products: What does this technology do for patient safety?

Dr. Poll: It makes the operation shorter and provides a better view of the anatomy.

FloShield is a disposable device that connects to the insufflator line via a tubing set.



The first study we've done was a retrospective study, it's not peer-reviewed yet, but it shows about a 10 to 20 minute time savings in a gastric bypass and it allows the surgeon to respond better if there's an emergency bleeder that would obscure the view. This would otherwise require that the doctor interrupt the surgery while blood accumulates.

It is common for surgeons to interrupt surgery 20 to 30 times a case to clean the lens. With FloShield, they remove the lens once, twice or sometimes not at all. They can also have a better view while doing the surgery. A tool that allows fewer interruptions and affords a better view can only help the surgeon perform the procedure better.

Surgical Products: Before FloShield, what were surgeons' options for keeping the laparoscope clean?

Dr. Poll: They would wipe it on an internal organ, which would usually produce a smear on the lens. More typically, surgeons will just remove the lens, clean it, heat it and then replace the scope to re-acquire the surgical view. It's common to remove the lens anywhere between five and 15 times per hour. So, on a two-hour procedure, removing the lens 30 or 40 times is common.

Surgical Products: Have you noticed a change in your practice as a surgeon since you began using the device?

Dr. Poll: Yes. I've noticed that once FloShield is in place, you just assume that the view will stay clear and you can't even imagine going back to having to take out the lens every five or six minutes.

Surgical Products: What do you think was the biggest draw for your peers to vote for FloShield?


Dr. Poll: Our device was attractive because it solves a long-felt frustration that many surgeons have. It's the thought that, "There is all this high-

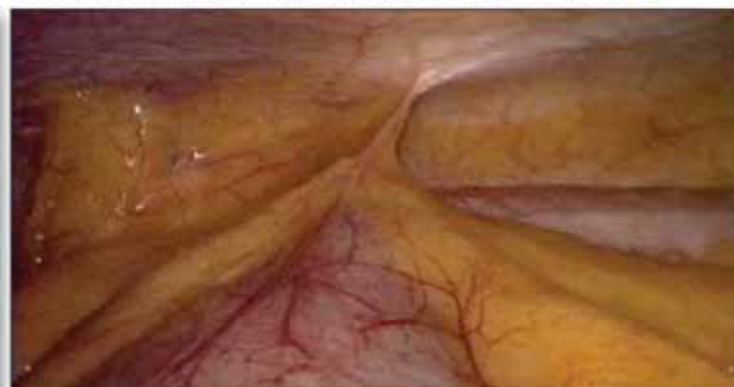
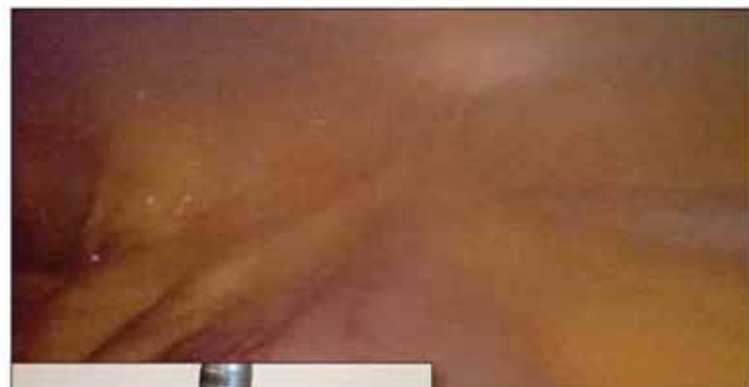


FloShield utilizes the CO2 used to inflate the abdomen to direct an air curtain over the end of the laparoscope lens, forming a protective boundary.

tech stuff, how is there not something that solves fogging?" I think there is a long built-up, un-met need about this problem among surgeons.

Surgical Products: What advice would you offer to other surgeons with ideas for new products, but who may have run into problems taking it to the next stage of development?

Dr. Poll: The first thing is to learn how to protect your ideas by recording the design and filing patent work. I believe the best avenue for surgeons is incubator programs. Most states have these programs, and they exist to help people turn ideas into a business. For me, it's been a successful project and a wonderful adventure toward a second career. 



FloShield: How It Works

Minimally Invasive Devices' FloShield is designed to keep the laparoscope clean and free of fog and debris during surgery. As Poll explains, FloShield uses CO2 that already exists on the surgical field to inflate the abdomen and direct an air curtain over the end of the lens, forming a protective boundary. Because the device uses existing energy in the flow of CO2, it does not require a battery or cord. The device is the length of a laparoscope—about 12" long and about 3/4" wide, Poll says. It is a sheath that the laparoscope goes through and is connected to the insufflator line with a simple tubing set.

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