

Q&A with Joshua Mecca, President and Founder of M&S Biotics providing an Autonomous IoT Solution with RFID to Detect, Track, Count, and Locate Surgical Items within the Operating Room in Real-time



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CEOCFO: Mr. Mecca, what is the concept behind M&S Biotics?

Mr. Mecca: The concept behind M&S is focusing on a twofold problem regarding the operating room, which consists of surgical counting, in the fact that surgical instruments come in a lot of redundancy where we end up seeing less than 20% of those

instruments utilizing during the surgical procedure for compounding that the fact that they still have to count all of those surgical items and instruments regardless of whether or not they are actually being used. We see this being a very laborious process, taking great deal of time in that operating room and also putting undue risk on that patient due to the frequency of discrepancies that happen at the completion of that procedure.

CEOCFO: Why is it an area that has been overlooked or able to go on for such a long time?

Mr. Mecca: Some different technologies have aimed to prevent it but in a lot of ways, processes in the operating room have been ongoing for years. A lack of change is really what pushed it and the reality that any technology that is going to come out and increase an extra process or put more responsibility on the nurse is ultimately going to lead to a lack of adoption. Nurses understand the most that some processes should be removed to improve workflow, but the last thing overworked nurse needs is a new technology with a long learning curve to pick up.

CEOCFO: How did you come upon the situation?

Mr. Mecca: I actually had a kidney transplant myself. In doing a lot of the research for the procedures, when I came across the fact that surgical items were actually being left behind in patients, although not as frequent as counting discrepancies, none the less it happened. Then as I started to dive deeper and deeper, I learned new practices that were being put in place in order to prevent any retained surgical items but the reality is that the frequency of counting discrepancy was pretty stagnant at one in eight surgeries actually having counting discrepancies. It was not until I actually had a kidney transplant myself that I started becoming more aware of the problems within the operating room and really wanted to do something about it.

CEOCFO: What is the M&S Biotic solution?

Mr. Mecca: Since this is going to be published we would like to keep it more high level. Here is what we would like submitted for this portion. "M&S Biotics is developing an autonomous IoT solution to detect, track, count, and locate

surgical items within the operating room in real-time. Effectively automating the surgical counting process while providing downstream analytics regarding instrument utilization by leveraging machine learning.

CEOCFO: Are you still in development stage?

Mr. Mecca: We are still in development. There are about six more months left of development. We currently have our version one of a working prototype that we are able to showcase to not only would be investors but us and hospitals themselves. One of the biggest issues that we were able to overcome was the fact that many instruments in close proximity have a lot of interference and that interference leads to inaccurate reading. Before we could get to our version two, we had to solve that big issue with interference and we have been able to accomplish that in the past year and a half.

CEOCFO: What has been the response from the medical and hospital community that you have been able to talk with and show your product?

Mr. Mecca: It has been fantastic. Hospitals are eager to get on board. We are not forcing anyone to learn anything new in the operating room. There is minimal on-boarding to use the system because it does not require any manual effort and it has been very valuable. All the time we see too many different products going in and the complexities in and around it and trying to onboard several different people, leading to a lack of adoption. That was something that we had envisioned being an issue upfront. Fortunately, we have been able to sell our vision, while also incorporating the feedback into future applications and design optimizations.

CEOCFO: Would this be an ongoing measurement?

Mr. Mecca: The contracts would span three years or more because on the front end, the obvious value prop to everyone is eliminating any chance of counting discrepancies or retained surgical items all together and also increasing the upfront efficiency from eliminating a process of counting all together. Everyone understands but the real value will come from the data that we are actually able to capture and this is interoperative analytics that nobody has been able to shed a light on yet. The understanding of not just utilization of these instruments but how they are applied to different surgeons and similar disciplines or not.

“This is disruption at its core. When we look at hospitals, healthcare productivity in the United States moves at half the national average compared to other markets. By 2027, 57% of the hospitals in the United States would be operating at a net loss.”- Joshua Mecca

CEOCFO: Would you tell us about the cost of an operating room? What is the frequency of returned surgical items?

Mr. Mecca: The cost of an operating room minute is around \$75 a minute and that is on average a more complex procedure and that cost goes straight up. That is a good ball park estimate of \$75 per minute. When we look at counting in general, 14% of operative time is spent counting surgical sponges by themselves, no other metal instruments, just sponges. The reality of it is if we could save minimally, 15 minutes per procedure at \$75 a minute we could save a hospital up to \$170,000 (providing they perform 150 cases in a week) a week in cost savings just on time alone of creating that new standard of efficiency. On the back end of that, when we look at counting discrepancies, right now one in eight surgical procedures have a counting discrepancy, meaning they cannot locate where that item is at the conclusion of the procedure. That could add significant time to that operating room as they are trying to search for that missing item. They have to take an x-ray of that patient to see if it is within the patient and after everything is done, twenty minutes to an hour could have gone by where they were trying to relocate this item. Not that create bottlenecks in the throughput of these procedures and it is placing unnecessary risk on patient as well because they are exposed to longer stints of anesthesia. It is proven that if you can reduce instrumentation going into the operating room you stand to save significant costs. Our long term goals are to create better utilization of instruments so that we can ultimately create a more effective procedure.

CEOCFO: Is it that the incident of RSI is so great that people are kept under until they account for everything, just in case something is left in the patient?

Mr. Mecca: Absolutely. In some instances, counting discrepancy might happen daily in an institution and that could be significant time of just keeping the patient under while they try to relocate that item. That causes a lot of stress not only for all the clinicians in the room but unfortunately, those longer stents of anesthesia could have downstream effects too.

CEOCFO: What is the plan to introduce this to hospitals and get a foot in the door?

Mr. Mecca: Healthcare is a relationship based environment and we have been able to form many relationships with hospitals through the Texas Medical Center's Innovation program TMCx. TMCx has given us the ability to interface with

hospitals directly, get them on board and actually start acquiring some letters of interest of them saying when this thing is ready to rock and roll, to start negotiating. That has been awesome. Also on the east coast is partnering with prestigious universities and their affiliated hospitals, getting them to agree to a pilot to roll this out. Being a part of TMCx, MedTech Innovator, and Startup Health has given us a lot of visibility and credibility as far as what we are trying to accomplish.

CEO CFO: *Where are you in terms of funding?*

Mr. Mecca: We have an open convertible note Round, one of the first investors in on that Round was the Texas Medical Center invested on the note terms. We are currently just pitching to several venture capital firms trying to raise our 1.5 million dollar round. We started that probably back in late April, early May and we have been engaged and trying to get through the diligence that is going on right now.

CEO CFO: *Why pay attention to M&S Biotics?*

Mr. Mecca: This is disruption at its core. When we look at hospitals, healthcare productivity in the United States moves at half the national average compared to other markets. By 2027, 57% of the hospitals in the United States would be operating at a net loss. We need to create something that could drive productivity and it is not going to be through the use of singular medical device products, it needs to be something that can span an entire operating room suite and we feel we have that. We are talking about eliminating a process that has been around for decades. With that comes a lot of attitude changes, a lot of preconceived notions about the technology. It has been an uphill battle since the beginning but any truly great idea usually starts out like that and we feel we got it. We understand that newer technologies are going to come out and we encourage it. We do not look at this as being competition; it is Co-Operation We need other people to help us validate the market. In the end, I think healthcare is too much of a mess not to be in it all together. That is where John and I stand on where that issue is. It needs to happen. Technology needs to come to fruition.

