

**Energy Independent Surgical Instrument Sterilization
Technology for Areas Lacking Electricity**

**Healthcare
Portable Sterilization**

**Eniware, LLC
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**Dr. James Bernstein
CEO**

BIO:

Dr. Bernstein is a recognized serial healthcare entrepreneur, driven by a vision and passion for social impact. He has more than 35 years of experience leading innovative enterprises in the U.S. and abroad. Dr. Bernstein began his entrepreneurial activities launching General Health, Inc., a preventive medicine, health promotion company, which pioneered the field of health risk estimation and computer based, data driven individualized report generation using the original PC. He then went on to launch bioinformat-

ics start-up Informax in 1992, which he took public in 2000, raising \$80 million. Prior to starting Eniware, LLC, Dr. Bernstein founded and served as CEO and Chair of the Board for Noxilizer, Inc. Dr. Bernstein has lectured on Entrepreneurship (Tuck, University of Maryland, Georgetown), serves as a Fast-Trac advisor (Kaufman Foundation), and is a frequent panelist at global business forums speaking on Entrepreneurship and advises start-up and early stage businesses. He is a graduate of Harvard College and Cornell University Medical School, and is trained in internal medicine and general and transplantation surgery.

About Eniware, LLC:

Eniware envisions a world where every man, woman and child will have access to state of the art healthcare, including infection-free surgical, maternal health and other medical procedures, whether they need care in New York City, a military's far forward surgical unit, a rural village in Uganda, or on the frontlines of a natural or man-made disaster. We believe our low-cost, energy-independent, portable technology that sterilizes surgical and medical instruments will help make this vision a reality.

**Interview conducted by:
Lynn Fosse, Senior Editor
CEOCFO Magazine**

CEOCFO: Dr. Bernstein, what is the concept and vision at Eniware?

Dr. Bernstein: Eniware has a portable, no electricity, no heat surgical instrument sterilization technology. We have a series of products which are unique, which can meet the needs of an overwhelmingly large number of people out in the world who live where

there is either intermittent or no electricity. It will support the development of and propagation of what is referred to as essential surgery; simple surgery required by all people. That would be such things as cesarean section, hernia operations or simple lacerations from trauma, which are unavailable in large parts of the world, because of a lack of electricity.

CEOCFO: How does the product work? What has been the challenge or the barrier in the past in creating this equipment?

Dr. Bernstein: The need for sterilization in surgery has been known since 200 AD, almost 2000 years ago, when the father of surgical anatomy, a fellow called Galen, used to treat the wounds that were suffered by people at the Roman Gladiator School with rags that were soaked in wine. That was 200 AD. The next innovation in sterilization did not occur until the late 1800s and there has been very little innovation in sterilization since then. Most sterilization today is done with large sterilizers or autoclaves that cost thousands of dollars. There has never been a technology which has been developed for reasons that are hard to fathom, but until very recently there was no technology available to provide sterilization without electricity. There were plenty of disinfectants. You see them when you go to your Purell dispenser in the hallway. That is a disinfectant. However, the body is a big incubator. If you put a few bacteria into the body you will get an infection soon enough. Disinfection does not kill all bacteria. Sterilization does. The way our product works is that it is a very simple, inexpensive container into which we place a little cartridge, like the kind of cartridge you might see in a

soda water maker in your refrigerator or a paint ball gun, that blows in a gas called Nitrogen Dioxide, which is a yellow brown gas that you see in smog over the city in which you live. That gas kills all bacteria, viruses, and spores quite quickly and safely. And that is it; no moving parts, that is the way it works.

CEOFCO: Where are you in the development and/or commercialization process?

Dr. Bernstein: The underlying technology is commercialized. It is available on the market today in the form of sterilization for industrial, pharmaceutical and hospital settings. That is delivered by a company called Noxilizer. We have licensed, exclusively in the world, that technology to be put into a form which uses no electricity. All of the R&D work has been done. This technology has been validated. We are in the customization business of turning it into a small, very inexpensive, portable form. We have assembled a team. We are raising money. We are interacting with governments all over the world. We are partnering with major institutions and we expect we will have the product in the marketplace, being used, within a year.

CEOFCO: Does the medical community believe that it will work? Do they understand easily and say "that is great, it should be used," or are there many skeptics?

Dr. Bernstein: We have not run into any skeptics. Therefore, the barriers to use for this product are not skepticism. The demand is overwhelming. The barriers are simply execution barriers; having sufficient working capital to do it and to put the right team assembled to put it together and make it work. It is not simple to introduce a new technology into the developing world. Therefore, we have partners that we are working with who are highly experienced in doing that. We are not overcoming skepticism. We are just overcoming the normal barriers of introducing new technology. We are partnering with an institution that is world renowned and is involved in fifty

counties. It is the leading group in the world that introduces new sterilization technologies. I cannot mention the name yet, because I am not allowed to. However, they are very well known. They are the group that writes the manual on what is the correct way to sterilize things. They have reviewed our product and think that it is extremely important to get this out into the world today. Therefore, there is no skepticism. There will always be people, especially in this country, who

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- Dr. James Bernstein

doubt that you can build a business in the developing world. "Those people over there will not pay their bills" or "they do not have the money to buy this". Those are the kinds of things you run into every day and they are completely off base; but they are quite prevalent.

CEOFCO: Once someone would purchase the machine they would then need a supply of the nitrogen dioxide?

Dr. Bernstein: They would need the consumables, which are the gas cartridge and a few other things that go along with it. That is correct.

CEOFCO: Is there a shelf life on the cartridge?

Dr. Bernstein: No.

CEOFCO: Then that would not be a problem. I am assuming it is almost a "no brainer" on how to use it?

Dr. Bernstein: That is correct. It requires a brain, but it is very simple.

CEOFCO: You do have considerable personal experience in this arena. What have you learned in your previous experiences that you are bringing to the table at Eniware that will help move the project forward?

Dr. Bernstein: I love the question! I have been a serial entrepreneur. I have been doing this for over thirty years. What are a couple of things that I have learned? Number one; things take twice as long and cost twice as much and are twice as difficult to do as you expect when you start. I would say that is number one. Number two; you cannot do anything alone. You have to have great people to work with. As Lau Tzu said, "The mark of a great leader is when the task is done people do not point at the leader; they say we did it." A leader builds a great team and gets out of the way. The third thing that I've learned is that you need to have sufficient capital to get the job done. That is because it is always going to cost more than you think. Number four; people will think that being an entrepreneur

means that you have freedom to be yourself and do what you like to do. They do not understand that when you are an entrepreneur you are totally beholden to and attached to the market, and that if you do not satisfy customers and give them what they need, you are out of business. Therefore, we are very market driven, very market driven.

CEOFCO: What is your Global Ambassador Corps?

Dr. Bernstein: That is a group of physicians, nurses, and health professionals based principally in the United States, who regularly travel to the far corners of the world on missions or projects where they go to do cataract surgery or veterinary surgery or general surgery for maybe two

weeks at a time. When they get where they are going they are shocked to discover that they do not have any ability to sterilize their instruments. People do not realize that, for example, only nine percent of the population of Uganda has electricity. They just do not know that. You would be surprised how un-informed people are. They get there and they cannot sterilize their instruments. Therefore, we intend to give them an Eniware Portable Sterilizer, which they can bring with them and leave behind. They will be part of our global technology transfer group.

CEO CFO: The Eniware site features a section "Disinfection is not Sterilization. Would you explain?"

Dr. Bernstein: Everyone has had a splinter, or they get a little acne on their face, or a sore tooth that is caused by bacteria that get in to your body and multiply. If you had a splinter on your finger that starts out a little red and then a few days later it may have puss, that is white blood cells attacking rapidly multiplying bacteria. The body is a big incubator. If I put one or two bacteria into your body, over time it will divide and multiply very quickly and give you an infection. Disinfection is something that reduces the number of bacteria dramatically on the surface of a knife or a fork or scissors or what have you. However, it does not kill all of the bacteria. Therefore, you would not want to have an operation done with a scalpel or scissors or suture that was disinfected, because it still has bacteria and spores on it. Spores are bacteria with a hard case that when they get wet, multiply very rapidly. Sterilization kills everything. There is nothing left to multiply. Therefore, you want to have your c-section with instruments that are sterile, not instruments that are disinfected. It is as simple as that. Since there has never been any portable, no electricity, no heat sterilizer, the world has done

the best it can; that is, use high-level disinfection in those areas without electricity. That is because it is better than nothing. However, the incidence of surgical wound infection in the developing world is about ten to fifteen times higher than it is in downtown Chicago.

CEO CFO: Would you tell us about the investment community interest? You mentioned there is some concern about making money, but it seems such an easy concept to understand?

Dr. Bernstein: It is. It is a very easy concept to get. There is nothing unusual about the investment opportunity on this one. I have learned from years and years and years of raising money and dealing with angel investors and strategic investors and taking companies public that it is no different than selling a house. Everyone has their own appetites, their own vision and their own view of what they would like to do with their capital. In this particular case you would have to find someone who, A. understands the problem and sees how big it is, and B. understands how you can make a lot of money selling things for a relatively small amount of money with a high margin at a high volume. It is sort of what I call "sausage sales instead of whale sales"; lots little things instead of a couple of big things. You also need to find people who understand that our business is sort of an annuity type business, where you have an annuity revenue stream once you have sold a product. Then you have to have people who are sufficiently tuned into the world who recognize, as many big companies now recognize, that the best place to put your money is in the emerging markets. There was a big piece in the New York Times yesterday about private equity firms that are increasingly looking to Africa to make their investments. That is because it has got the most rapidly growing economies in the world. It has the

greatest growth in population, which is where your customers are. We have to find people who meet those requirements and they are out there. There are just not nearly as many of them as there are people who want to invest in a new ringtone for a telephone or a new software app or a new social media site or a new set of earphones, a new video game or "you name it". All of these new, very rapid return, "quick to sale and quick to succeed" consumer based electronic things that are very attractive; that is the competition. We are doing fine, but it takes a special kind of person who actually cares about the world.

CEO CFO: Why should investors and people in the business community pay attention to Eniware?

Dr. Bernstein: Bill Gates gave a talk about a year ago at the Forbes 400 Billionaire's Club and made the point that innovation is sorely needed to solve the major problems of the world. The big corporations and the government do not tend to make investments in innovation. They tend to leave that to others, which leaves wide and huge areas of opportunity for investment with big returns. Big companies do not do that. Bill Gates took the position that the reason why he had his foundation and the reason why aid existed was to fill that gap. However, he also said that even though private partners have backed many innovations in medicine and science they dramatically under invest in innovation, especially in the developing world. I think that is changing. At Eniware, our position is that the developing world, as Gates would say, "is a vast unexplored space of innovation where the returns could be fantastic." That is a quote from Bill Gates. Therefore, I think that investors are increasingly learning about that and understanding that.



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