

Simultaneous Wireless Connectivity in Medical Devices for Multiple Patients



Mark Darrah
President & CEO

CEOCFO: Dr. Darrah, what is Athena GTX?

Dr. Darrah: Athena is a small business that focuses on wireless medicine and wireless connectivity of medical devices. Our forte is our ability to monitor and assess multiple patients simultaneously. Due to our history with the military Special Forces arena, we are also very applicable to mass casualty incidences, which we just saw on the news; things like what happened in Paris and San Bernardino, where they are overrun with many injuries simultaneously and we need to do our best medicine possible.

CEOCFO: How does it work?

Dr. Darrah: We have a series of devices that are small, lightweight and mobile that take vital signs from the patient. They can be placed on the patient and will accompany the patient as they are moved throughout the care continuum, continually acquiring and transmitting vital signs data. Remotely we have computers that wirelessly connect to the patient devices to summarize that data into information for the care provider. The data can even be transmitted to care facilities that are remote.

CEOCFO: Would a paramedic or police department purchase X number of each type of device to have them available as they are deployed? What are the nuts and bolts of how it gets from you to the emergency people and then to the patient?

Dr. Darrah: That is an excellent question! There are a variety of ways this can happen in some of our customer situations. A mass casualty bus can be outfitted with our devices. Therefore, twenty small medical devices on one bus that transports numerous patients is outfitted and then that bus will transport from a site like, for instance, San Bernardino. All these patients can be put on the bus, simultaneously transmitting their vital signs to the hospital or the ER doc. Similarly, on a battlefield, we could have multiple war injuries with a remote care provider tracking all of those simultaneously to make a decision about who needs what care and when. We will track not only vital signs, but trending data, so we can anticipate a deterioration of a patient, which may elicit a faster care response than if we didn't have that vital data. There are a variety of different applications, even on something as busy as an emergency room on a Saturday night for example. There could be fifty people waiting for care, but only five of them are urgent. This data can help physicians prioritize who needs care earlier.

CEOCFO: Is it the capability of the devices that you developed in addition to how they are deployed? Have you acquired devices or technology that are already available? How does this come together as a package?

Dr. Darrah: Devices are very common in the industry. There are many medical monitoring companies and many medical product manufacturers out there. Just off the top you can likely name ten to fifteen of them. However, the application of our devices is a little bit different. For instance, an EMT grabbing a medical monitor that weighs 25 pounds, running up a flight of stairs to check someone is totally different with a one pound monitor that Athena GTX makes. We build devices that are very small, mobile and lightweight that accomplish very similar, if not identical, vital sign monitoring as the bigger devices. In most cases medical monitoring does not require the big complex system. If necessary, our smaller monitor can be switched out to another product during the course of care. The key, though, is the data. Not only are our devices extremely dense, small, lightweight mobile packages, but we also connect that data to other technology commonly used. It's about the enhanced technical innovation that Athena GTX brings to the table. Today it's all about speed, wireless connectivity and intuitive design and simplicity of use. An eighteen year old medic on a battlefield can use our devices as well as an ER doc that has too much on his or her mind during an intense Saturday night. They can look at the device data on a Smartphone and get an instantaneous understanding of the health of their patients. Taking that one step further, now we are talking about networking, medical networks that are expanding phenomenally. They are pushing more and more data very easily through what we simply refer to as pipes. There are turbo charged networks tied to really cool devices with high def displays. All of this is getting better and better as we go in an industry that is telecommunications, not telehealth. However, when we do the monitoring and the telecommunications together that is the special sauce that Athena brings to the table. We marry those two things together quite effectively.

CEOCFO: *It would seem pretty hard to resist. Who is using your services today?*

Dr. Darrah: We started with the US Special Forces, branching out to the military in general, because what really drives this technology is demand. A cool idea does not sell. There have been many studies done on technology adoption life cycles where there is this gap or this chasm between the early adopters and what you might call a pragmatist or what some people call the early majority. That gap is key, because we predominantly live on the early adopter's side. If you look at the Special Forces, they are into what we do because the demand is high; weight, size, volume and how much funding you need to push a force far forward. However, what we are seeing now is that the majority of our market is first responders. EMS, EMTs, SWAT officers and police are using the technology so they can project medical care far forward. Let me give you an example. Medical will have a standoff. EMTs will be in a standoff posture with an active shooter situation. In many cases the active shooter has SWAT and police officers engaged and perhaps they get injured. If medical is in a standoff position how would they render care until it is a controlled environment? That is one niche where we live.

CEOCFO: *Does the life and death nature transcend the cool device scenario that you mentioned or even in this industry is it the same concept?*

Dr. Darrah: People are fearful of technology innovation. Why are they fearful? Sometimes we fear what we do not understand. Therefore, if you have a progressive innovative person that sees the value in the innovation they are much more likely to adopt it. Therefore, whether you are a rural doctor in the middle of Iowa or Nebraska, if you have that innate elite provider sense like your Delta Forces or Navy Seals would have, then you would embrace the technology. The coolness is about the technology's capability to improve care, so you will adopt it. That is our biggest issue as we go forward. Are these providers still using flip phones? Do they even have a cell phone or are they on an iPhone 6 or an Android platform that is truly a mobile computer? You can see in the customer base whether they accept innovation or not. We are looking for the elite providers that really get it. Then there is no issue.

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CEOCFO: *How are you finding the best prospects for what you do with so many potential users? How do you reach out to as many people as you can, but pinpoint where you think it will have the most effect?*

Dr. Darrah: We are living in a different world if you think about something as simple as how people communicate today versus how they did ten years ago. I would even ask you, do you have the same the same cell phone you had ten years ago? Certainly not. We are connected through the internet. That is how our customers are finding us. They may Google a word like telehealth and hopefully, if we are being published enough, and we have content out there, our name gets recognized and helps our branding. In addition to that it is word of mouth. Therefore, we want to be careful we do good work and produce innovative products so word spreads pretty rapidly. Certainly, in the military that has been proven to us. In the civilian world the same thing is true. We go to the trade shows and we do demonstrations. We do demo's at remote sites and like any other marketing effort, it is all about exposure.

CEOCFO: *What are you able to measure with one of your devices that might surprise people?*

Dr. Darrah: The most innovative capability that we have right now is use on a congestive heart failure patient. We do not have to weigh the patient to do total body water or edema. We have technology that can measure congestive heart failure efficacy of drugs. Therefore, if you give a diuretic or Lasix we know if that dose is proper or not. The same thing goes for something like a beta blocker for heart issues. We know if the patient has taken their drug and if it is the right dose. Phenomenal technology exists today that was not available just a few years ago.

CEOCFO: *Do you foresee a time when your devices will replace the standard devices in a hospital just because they are easier rather than moving around a piece of equipment through a crowded emergency room setting?*

Dr. Darrah: It may surprise you — I think the day is now! I think that it is possible now, but again it comes down to demand. That is where telehealth or the whole idea of being able to communicate with a patient more effectively is going to fuel the demand for technology. Let us look at an example. A cardiac cath lab visit is going to cost roughly twenty five thousand dollars. If we offer an alternative screening technology that costs six dollars everyone says, "Wow! That is cool! We need one!" Even though cardiac cath labs are very expensive, they also produce a lot of revenue. Therefore, the resistance to the technology is going to be present and we have to overcome that. I think the technology exists to do what you are saying, but the acceptance of it is based on demand. It is a continuum of care. There is an insurance provider at the end that pays for it, a physician that needs to be compensated for it and a series of nurses and facilities in there that all have a piece of the pie. However, ultimately it is about the patient. If a patient can stay in their house and do a measure

of screening without requiring them to travel, that is where our technology is of value. Patients do not want to go to a hospital. That is very clear. If we can allow them to stay at home and have better health that is a wonderful technology for the future.

CEOFCO: *You said that someone might Google telehealth. Is there an industry yet for first responder telehealth or are you breaking new ground here?*

Dr. Darrah: I think both. I think the industry is there. I think telemedicine's time has finally come. It is the biggest trend in health, I think, this past year more than ever. It is about maturing to the point where doctors can offer a good experience to a patient. Sometimes during patient care, particularly in nursing homes, there is a need to place a 911 call for a patient ambulance transport to a hospital. We are seeing twenty to thirty percent readmissions to hospitals from nursing homes. Not all of them, and I do not want to throw any under the bus, but when you think about that kind of readmission, it is under direct daily care. Also, what we provide works in rural America where you do not have the daily care or the remote patient is unable to travel to the hospital because they simply do not have transportation. In both instances we are circumventing the deterioration of the patient's health. If the insurance company understands that they can avoid the readmission, which is tens of thousands of dollars for a three or four day stay, they embrace it. Now there are a variety of parody laws that are being passed in the states which will allow this to happen. However, I think this is what people often do not grasp. The technical innovation is there. The demand is growing, and the fastest growing demographic for social media and computers is actually the sixty plus age group! We have the ability to target that market. They are more comfortable now than ever using the technologies that you and I may use on a common day. My ninety two year old father is not as opposed to using a cell phone any more as he might have been ten or twenty years ago and that is going to propel this capability.

CEOFCO: *How is business today?*

Dr. Darrah: Business is good! Like I said, we are living in that early adopter zone, so I think the ground swell is good. All the communications technology trends of the last few years are fueling this growth. We are exactly where we need to be. Most of our income right now is still Research and Development from customers that fund us to look at things for them in the future. Therefore, we are in touch with the innovation of the future and the product market sales are growing, so I like where we are.

CEOFCO: *Do your devices need maintenance? Do they need battery changes? How do you ensure that people who are using the devices will pay enough attention so that they are ready when they are called upon?*

Dr. Darrah: There are two ways to do that. In some of the markets we serve, they use off the shelf batteries and simply swap new batteries in. In other products we create, devices are rechargeable. We have scales on how charged your system is and mechanisms to do that. As technology gets older we do refurbishment, replacements and upgrades. Depending on the situation and the product we try to stay in touch with that the best we can. What surprises no one is in many of the rural hospitals, the technology is outdated and they cannot afford to upgrade. In these cases, the oldest model is going to become more and more common (and concerning) as we go forward. There will not be the large sales for medical devices. It will be a leasing scenario the same as what we do with our automobiles in many cases. Every three or four years you just basically get a new one.

CEOFCO: *Why is Athena GTX an important company?*

Dr. Darrah: I believe there are a couple of things we are doing here that will result in some attention to our company. Small, lightweight vital connectivity is certainly key. However, we are one of the few companies that can monitor multiple patients simultaneously to any Smartphone, any operating system and we have FDA clearances to prove it.

Interview conducted by: Lynn Fosse, Senior Editor, CEOFCO Magazine



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