

Automated Pain Medication Delivery Device for Acute Care Hospitals and Skilled Nursing Facilities



Ned Buffington
Chief Executive Officer

Avancen MOD Corporation
<http://www.avancen.com/>

Contact:
Ned Buffington
843-714-0566
nbuffington@avancen.com

Interview conducted by:
Lynn Fosse, Senior Editor
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CEOCFO: *Mr. Buffington, would you tell us the vision at Avancen?*

Mr. Buffington: Our purpose is to provide more efficient and economical means of delivering as-needed pain or other medications by automating the process in acute care hospitals and skilled nursing facilities.

CEOCFO: *What are the challenges for a caretaker coming around and providing medication?*

Mr. Buffington: The main challenge for the patient is that the current pain protocols are not based on clinical evidence; they are driven by economic and personnel issues. If you had a joint replacement or hysterectomy most anywhere in the US, chances are you would most likely receive an order for ten milligrams of an opioid to be given every four hours. Because it is “as-needed,” the patient has to ask for the pain medication, which is a disruptive event. The results of the current pain protocol are generally not optimal in terms of pain management because the dose has to sustain the patient for a four-hour period of time and the patient begins to watch the clock and get anxious. With the one-dose-every-four-hours protocol, a patient experiences what you would call a series of peaks and valleys. There is enough medication in the patient’s system to control the pain at first, but as time progresses and the dose wears off, the pain escalates and there is not enough analgesics remaining in the system to alleviate pain or discomfort. From a clinical point of view, a much better pain protocol would be five milligrams every two hours, which provides a steady state of analgesic in the patient’s system and pain is then well managed, but the patient never experiences the euphoria with too much medication at one time or the discomfort and pain with too little.

CEOCFO: *How does Avancen come into play?*

Mr. Buffington: We automate and simplify the medication delivery process through technology – the right prescribed amount at the right prescribed time. As a part of our Medication on Demand (MOD®) system, RFID technology is used for identification and security. The device is locked onto an IV pole beside the bed and the patient wears an RFID wristband. A ready light on the device lets the patient know when the medication is available, and the patient enters a pain level number on the device pain scale from 0 to 10. This is required by The Joint Commission and the Hospital Accreditation Board, and that pain level is recorded in the patient’s electronic medical record. The MOD® device rotates and gives the patient a single dose of the prescribed medication. The patient actually needs to take the pain medication whenever it is available so that the pain is well controlled. Studies show that well-controlled pain is conducive to healing and covers a broad spectrum of issues. A clinical trial conducted at a magnet hospital now using the MOD® device showed that the device provided patients with better pain control over manual delivery of medications in a number of areas including appetite, sleep, mobility, physical therapy, and general well-being.

CEOCFO: *What happens if the patient does not pay attention?*

Mr. Buffington: My favorite byline for the MOD® device is this: “Would you rather have pain medication waiting on your patients, or your patients waiting for their pain medication?” The device simply sits ready and waits for the patient. Because the device was developed to deliver as-needed medication, it is ready for the patient when the patient needs a next dose. We’re also hearing that, because patients don’t have to ask a nurse for their pain medication and risk having to wait for some periods of time, they’re better representing their pain levels, which gives the staff and the facility a truer picture of their pain protocols.

CEOCFO: *Who is using your system now and where are you in getting the word out?*

Mr. Buffington: We have ten or eleven reference hospitals scattered along the East Coast from Florida to Massachusetts. We have six regional specialty distributors covering most of the western United States. The MOD® device is being used in Beth Israel Deaconess Medical Center, which is a Harvard teaching hospital in Boston; in the ante/postpartum unit at Tampa General Hospital in Tampa, Florida; and in the orthopedic unit at Flagler Hospital in St. Augustine, Florida. We also have facilities in Pennsylvania and New Jersey.

CEOCFO: *How do you get an audience?*

Mr. Buffington: We spend a lot of time looking for early adopters and bringing them onboard as reference accounts. We are now also using regional specialty distributors. Some of our distributors have been in business for forty-plus years. They have good contacts within the hospital and they specialize in introducing technology to hospitals. They have people who understand that they will be bringing things that will benefit the hospitals and the patients. Avancen just received a New Innovative Technology contract from the largest GPO in the country, which opens up 3,300 potential hospital doors.

CEOCFO: *What is your MODTrac™ database?*

Mr. Buffington: The MODTrac™ database is part of our enterprise level software. We have two different platforms of enterprise level software. One is a standalone system that is a virtual machine of the hospital server, which has its own database, and the information is wirelessly transmitted to the database. We have a similar platform with its own integration agent that will feed directly into the electronic health record. A dashboard allows nurses, physicians, and pharmacists to see the progress of any patient using the device in the hospital and to choose reports for the information they need. The software also has a reassessment feature. The MOD® device turns itself on after an hour and asks the patient to reassess the pain. The original pain scores are charted and graphed to compare the patient’s reassessment an hour later so that nurses and physicians can quickly tell if the pain is being managed adequately.

CEOCFO: *What has changed in your approach over time since?*

Mr. Buffington: When we originally developed the MOD® device, the software was developed to program on a single computer through a USB connection. As enterprise level Wi-Fi systems came on board, we developed the enterprise level software for the device and reconfigured the physical MOD® to transmit wirelessly or through Wi-Fi. A statistic that many people do not know is that, in the 2008-2009 timeframe, fewer than 17% of US hospitals had a fully functioning system-wide Wi-Fi system, but through government mandates and incentives, by the end of 2013 87% of US hospitals now have a fully functioning system-wide Wi-Fi system. This has been a major change in our approach.

CEOCFO: *What has been the patient response?*

Mr. Buffington: The patients love the MOD®. We just finished a formal clinical trial at the University Of Pittsburg Medical Center where we had over 95% nursing satisfaction, as well.

CEOCFO: *What is next for Avancen?*

Mr. Buffington: Our niche product is our A-MOD®, for which we recently received a patent. It is called the A-MOD® for Ambulatory Medication on Demand dispensing device for outpatients.

CEOCFO: *How does that work?*

Mr. Buffington: Instead of RFID, the A-MOD® will use fingerprint technology and holds more medication. The MOD® for hospitals holds only eight doses of the same medication in the disposable tray and is changed about once a day. The A-MOD® will hold between 25 and 28 doses of medication and would be used on an outpatient basis. It will gather all the same kinds of information that can be transmitted wirelessly or by cellular back to whoever needs that information.

CEOCFO: *Final thoughts?*

Mr. Buffington: The core issue here is managing patients’ pain. There are many studies that show that a lot of chronic pain comes from pain not being adequately managed at the time of the event of either an operation or a trauma. My

business partner and the inventor of the device is Dr. Sharon Conley. She is a PhD, MD, CPE, Certified Pain Management Educator. Dr. Conley was a practicing oncologist/hematologist for a number of years. She actually had the idea for the device during her practice. She would frequently find her patients in pain because the nurses had not had time to get pain medication to them on time. She could not understand why something as simple as delivering a pill could not be automated, so that is what Avancen has done.

